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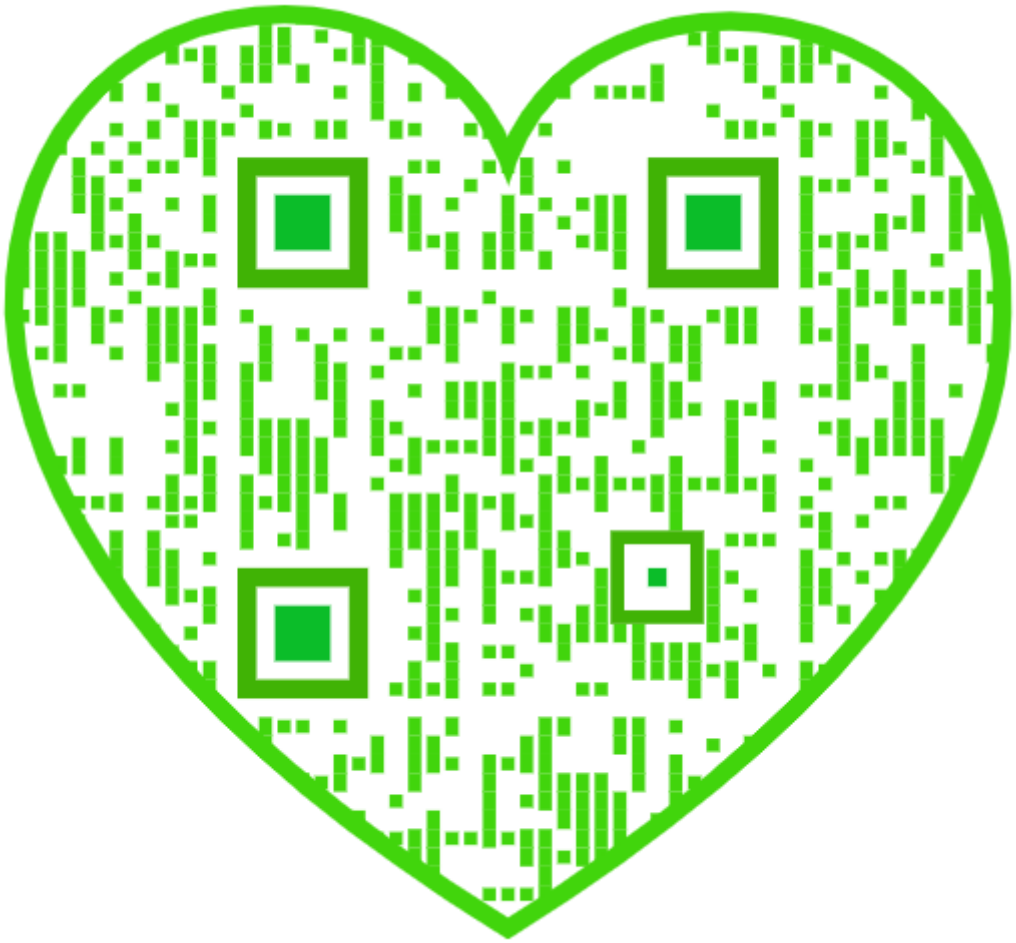

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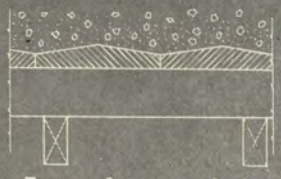
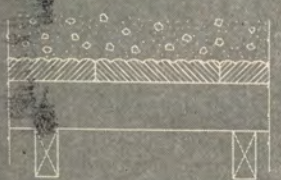
DIAGRAM A



Forms for spandrels and area above door

DIAGRAM B



Forms for pilasters on either side of doorway

● Surfaces of this monolithic concrete building were cast in place from architectural concrete. Treatment of the spandrels and of the area above the door was produced with forms in which the boards were placed vertically. See Diagram A.

● Fluting in the pilasters on either side of the doorway was cast in forms constructed of vertically placed 2″ x 10″ planks, dressed on all four sides and routed. See Diagram B. The diagonal grooves were made by tacking strips across the routed planks of the form.

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rance Company, of New York City, the
s were placed at the second and third base-
ment levels—thirty-four and forty-eight feet below the ground. At lunch time a great crowd of people (eight thousand employees in the first unit alone) would want to go to these restaurants and afterwards to the street before returning to work. How could the traffic of this noon-hour crowd be handled without throwing a great burden on the elevators and demoralizing service to upper floors?

The solution: Two banks of a new type of Otis escalator designed especially for quietness were installed. These escalators are reversible (run either up or down depending on the flow of the traffic) and have a combined capacity of fourteen thousand persons an hour. As shown in this diagram, these escalators supplement the service of the twenty-six elevators.

Wherever a great throng must be carried a short vertical distance in the least possible time, escalators help solve the transportation problem—and here is an important point: *Many an old building may be transformed into a modern paying investment through the help of escalators.*

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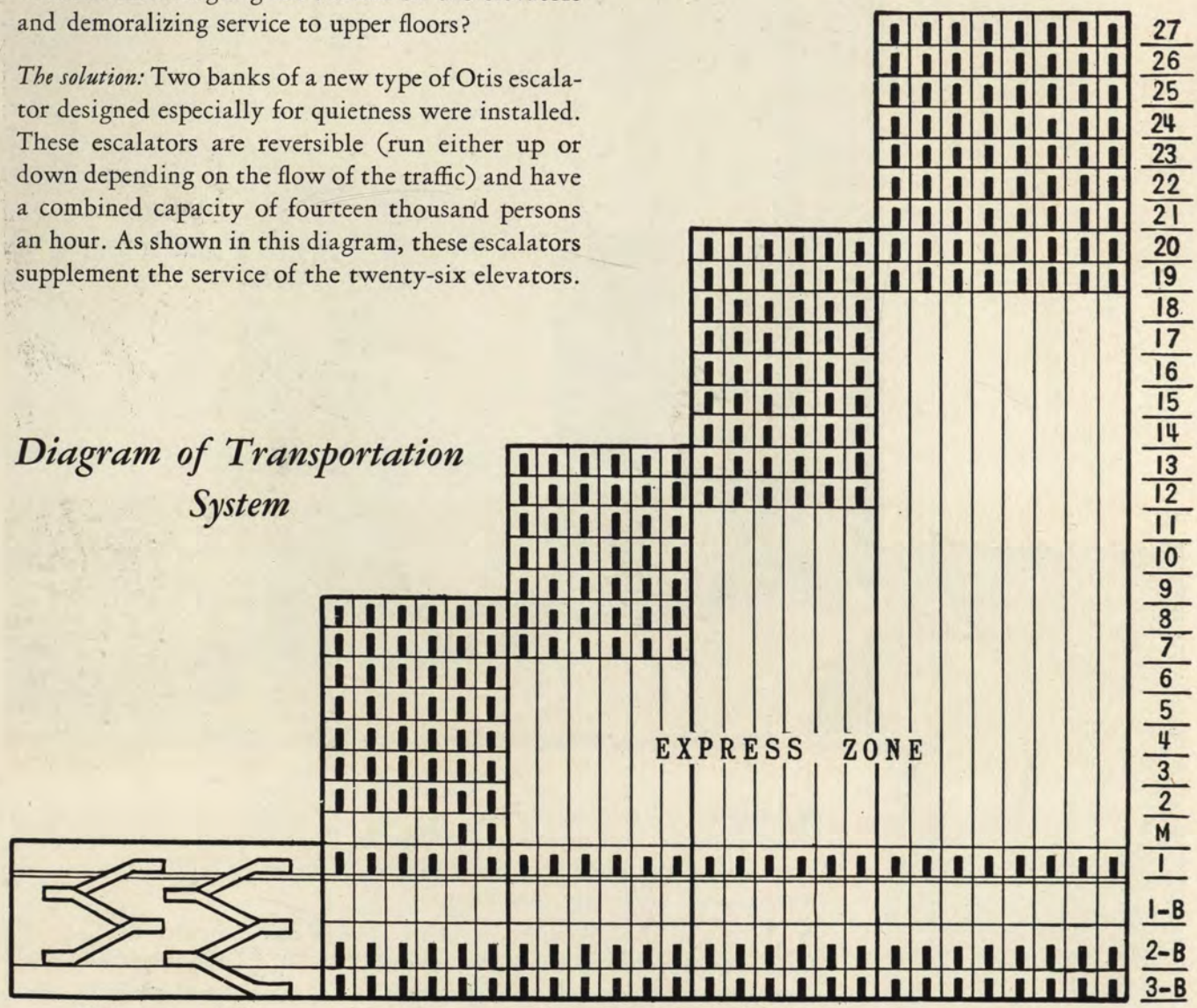
Diagram of Transportation System



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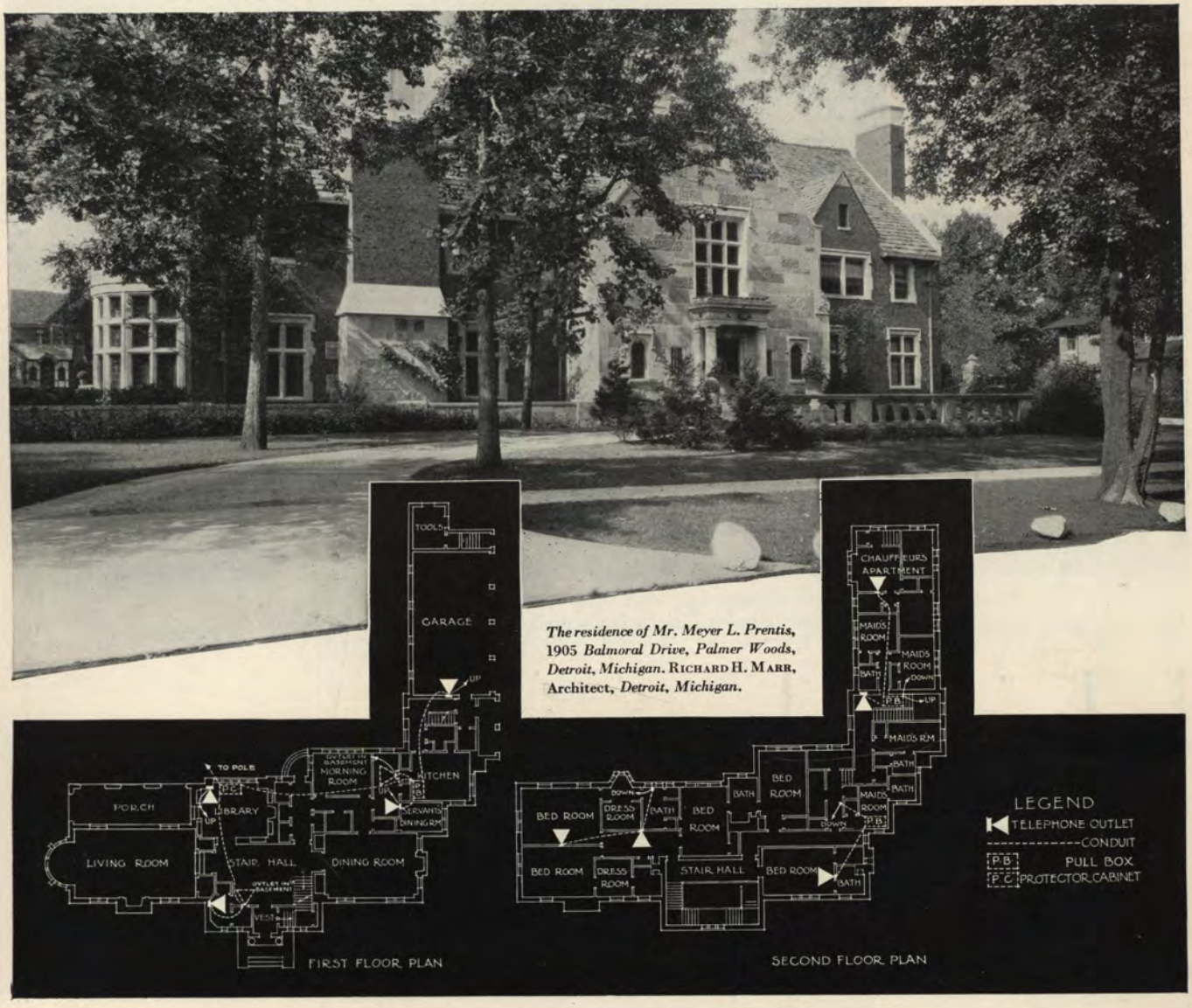
THE TELEPHONE COMPANY HELPED PLAN THIS HOUSE



The residence of Mr. Meyer L. Prentis, 1905 Balmoral Drive, Palmer Woods, Detroit, Michigan. RICHARD H. MARR, Architect, *Detroit, Michigan.*

THE telephone arrangements for this distinctive Detroit residence were carefully worked out in advance, with the help of the local telephone company. Outlets were located at eleven strategic, step-saving points throughout the house and the necessary conduit included in walls and floors during construction. All eleven stations are linked by a Bell 750-A dial intercommunicating system, and there are two central office trunk lines.

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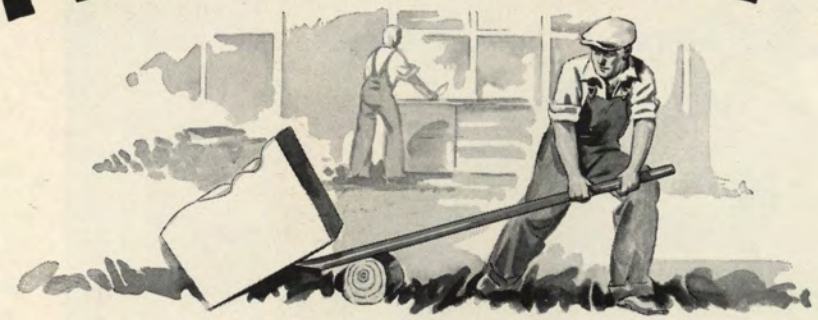

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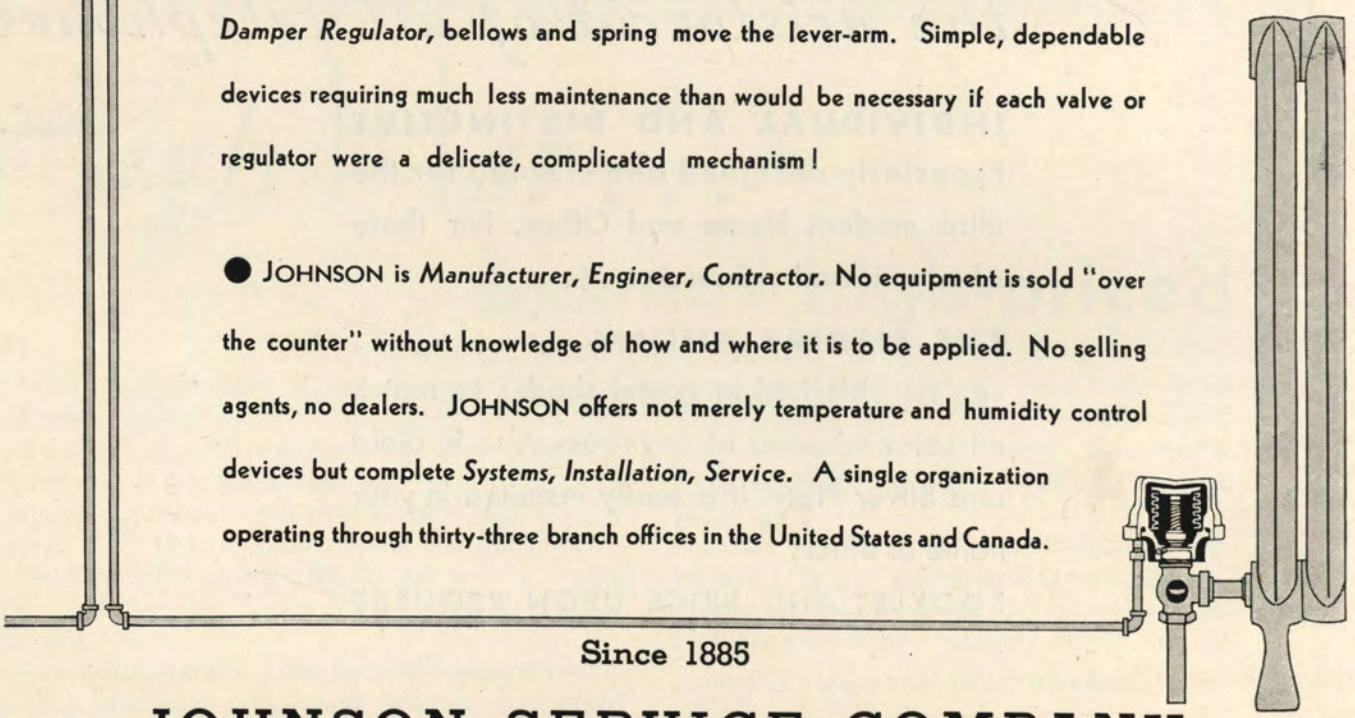

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Architectural Service»» a Luxury or Necessity

By BENJAMIN F. BETTS, A.I.A.

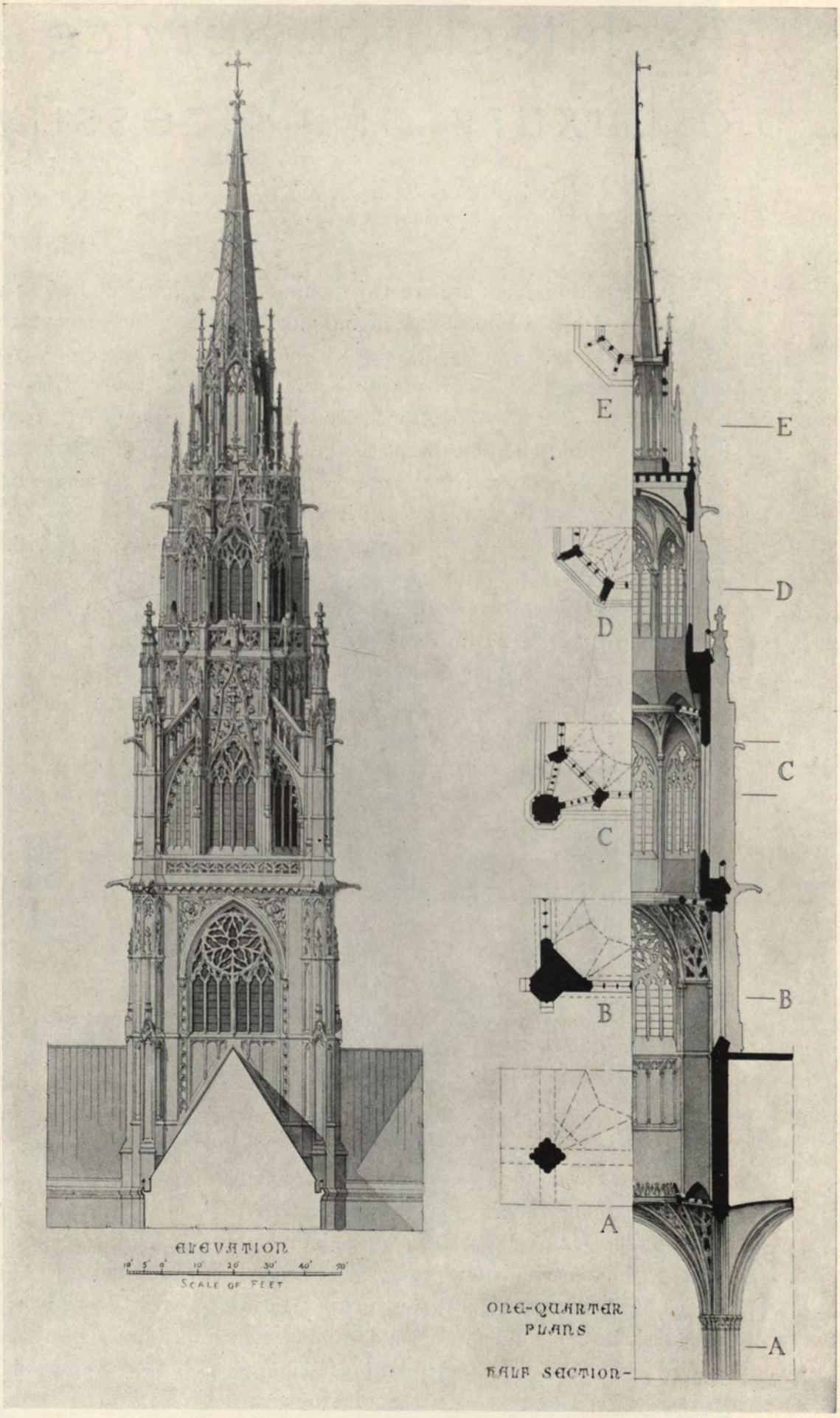
NO large buildings are erected without the guiding hand of an architect. As the size and importance of buildings decrease, the percentage designed by architects gradually decreases. On the surface, therefore, it would appear that architectural service falls into what is termed the *luxury class*—a service to be bought by the few who can afford it or who, through some circumstance, must have it. Laymen too generally accept this point of view. On the other hand, the opinion of the architect and those who have learned the value of his service is diametrically opposed to the layman's. To them it is a *necessity*.

»»Architectural service can hardly be placed in the luxury class with jewelry, high priced automobiles and other commodities usually purchased when money is plentiful. Neither can it be put in the necessity class with clothing, food and shelter. At the same time it is a service essential to the sound development of building projects, large and small. It is a service that demonstrates its particular usefulness when comparatively little money is available. Through the architect's skill it is a service that can usually be had for little or no additional cost. Yet too many people think that its small cost is something to be saved or applied to securing some gadget that could not otherwise be afforded.

»»Permitting the public to continue to look upon architectural service as a luxury is a fault of the profession itself. It has assumed, because the public believed this, that nothing could be done about it. The profession as a whole has concentrated too much on securing big jobs and has let small jobs get done as best they could. In so doing it has overlooked a large, fertile field.

»»America, today, is passing through a transitional period. We are about to enter a new era—an era that will doubtless have a marked effect on architecture and architectural practice. Looking forward to tomorrow's business, now is the time to lay a solid foundation that will assure the profession's future position.

»»If the profession will take a leaf from the book of the medical profession, it can establish itself in every community as a powerful factor in the building industry. This means closer future contact with the public than in the past; assuming leadership in moulding public opinion in all matters associated with building—community planning, housing and problems of the individual. Through consulting services at a price within reach of everyone, and—when justified—advice without charge, the profession can become the advisor to the man-in-the-street, serving in its relation to building matters as the physician does in matters affecting the health of communities as well as individuals. When the profession gets "close" to the public, its service will be viewed as a necessity and not a luxury.



FOUR YEARS after its completion the tower of Beauvais Cathedral collapsed. Models of the tower were ordered in 1544, plans were accepted in 1560 and the tower finished in 1569. It fell in April, 1573. This restoration drawing of the tower by Richmond K. Fletcher is based upon documents in the museum and archives of the cathedral chapter

COPYRIGHT BY R. K. FLETCHER

"The Lost Tower of Beauvais"

BY RICHMOND K. FLETCHER
Of the Office of Cram and Ferguson, Boston

HIGH above the jumbled roofs of the town of Beauvais looms the truncated mass of the unfinished Cathedral of Saint Pierre.

The first distant view of the building, seen in silhouette against the evening sky, suggests the last-remaining fragment of some gigantic cliff sheltering the town which huddles at its feet. A nearer viewpoint reveals the true nature of the astonishing ensemble, and induces an unsatisfying disquietude. For in their lofty isolation, the gaunt group of choir and transepts cry out for the sadly needed support of the missing nave.

This cathedral presents to the uninformed an intriguing enigma. What secrets of frustrated effort—of conquered obstacles—must lie embalmed within those walls and buttresses of silvered stone! What tragic stroke was that which cut short the progress so magnificently begun?

To many who read these lines, the answer to this question is already familiar: how each succeeding cathedral tempted its builders to outstrip their competitors in daring experiment, striving for ever higher and lighter construction until Beauvais, having raised its vaults above those of Amiens, was left clutching a hollow victory. For it was only by the "illegitimate" use of iron tie-rods, that the recurrence of two bad disasters was prevented. The ant-like patience with which the daring builders reconstructed their choir, after a total collapse, was a potent example to their descendants, who were destined to face a still more dangerous problem.

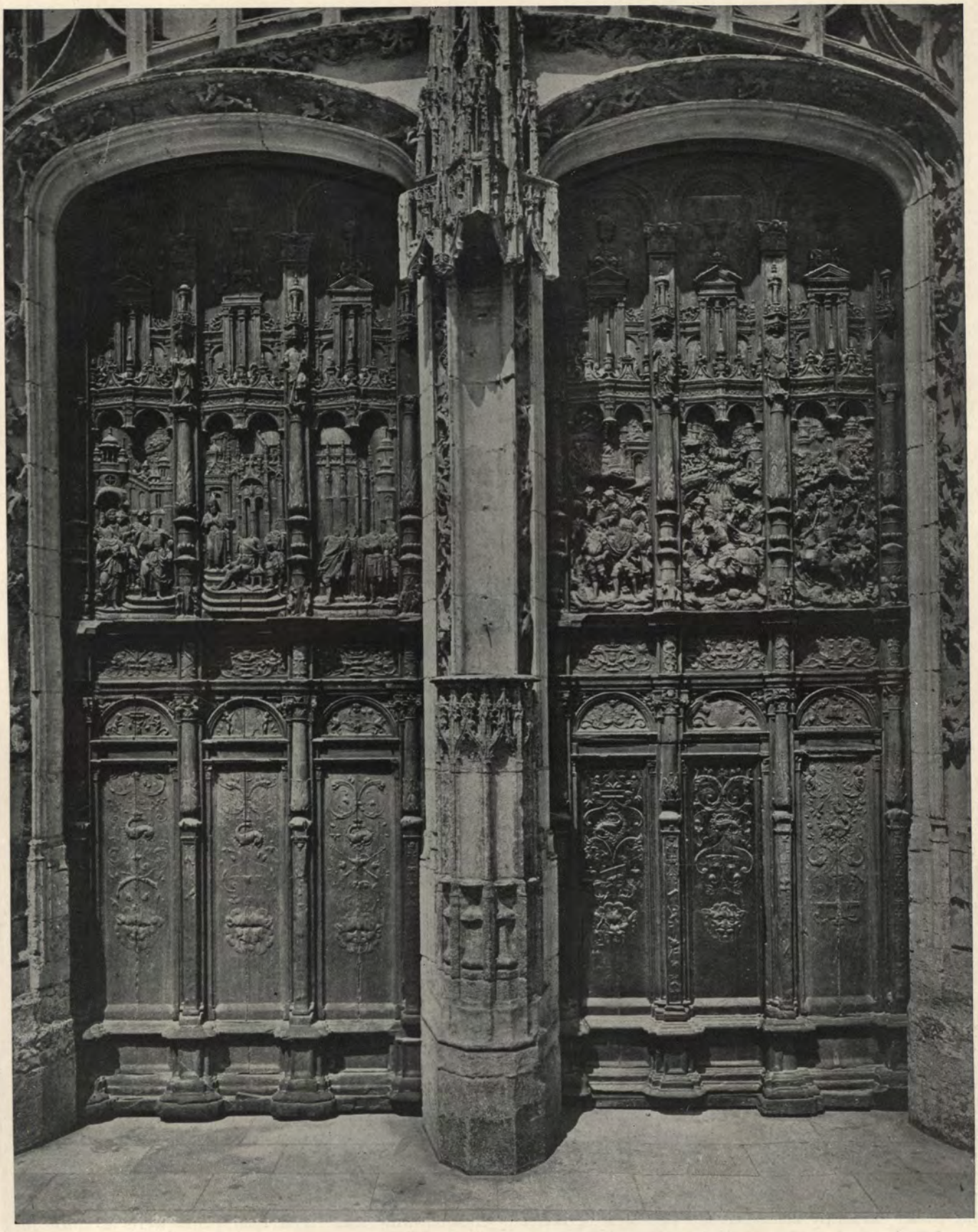
It is not very generally known that in the sixteenth century the crossing of this church once supported the highest tower ever built up to that time, nor that the premature birth and death of that tower offers an explanation of the failure to build the nave. Had that portion been erected before an attempt was made to construct the central tower, it is possible that Beauvais would now exist complete, the most magnificient of all cathedrals.

Considering the importance of this tower in relation to the art of building, it seems remarkable that so little is now known of its actual appearance. During the four years of its existence, it must have received wide acclaim, and in a way it marked an epoch in Gothic art. Yet even so obvious an authority as Viollet-le-Duc gives it scant attention, and reliable drawings of it have apparently not been published. Notwithstanding, vital records are available, and they are authentic.

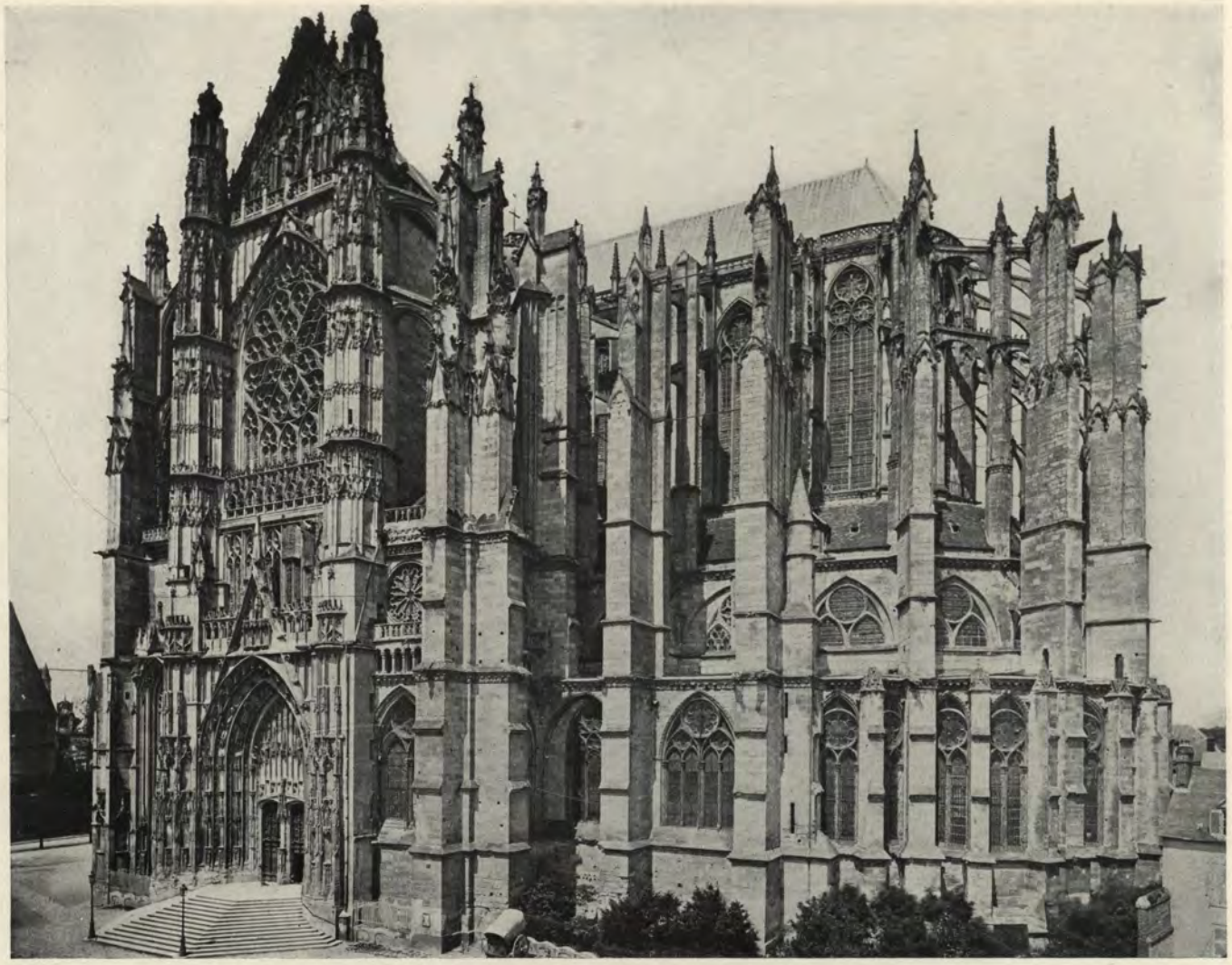
In the archives of the cathedral chapter, and in its museum, there are preserved a description of the tower, its major dimensions, the story of its construction and collapse, and the reports of the experts who investigated the preliminary faults and the wreckage following the disaster. This matter has been published in French by Gustave Despardins, in his *Histoire de la Cathedrale de Beauvais*. A similar account with a reproduction of an old sketch of the tower may be found in *La Cathedrale de Beauvais*, by V. Leblond. In some respects, this sketch corresponds to the authentic description.

Based on these authorities, the accompanying drawings are offered as a plausible restoration. Where it has

THE CROSSING above which Beauvais' lost tower rose a sheer 500 feet. From here three pierced vaults of finely carved stone afforded a view of lofty colored windows. Above them, at a height of almost 400 feet, the slender tower piers supported a ribbed spherical vault, enriched with painting and gold



THE DOORS OF THE SOUTH TRANSEPT will serve forever as the main entrance to the cathedral, for the nave of Beauvais will probably never be built. The richness of their detail suggests the splendor of the lost wooden spire, and the canopied pier between them hints at the flamboyant delicacy of the whole tower



been necessary to interpolate details, this has been done with the assumption that the flamboyant style of the transepts would naturally have been continued in the tower, especially as Michael Lalaye, who had much to do with the plans, and Jean Vast, the younger, who carried them out, had both been architects on the transepts. It is probable that the style as originally designed would have been more markedly influenced by the decadent tendency of contemporary work, but as the extent to which this might have been felt is entirely problematical this factor is intentionally ignored. Since the description does not divulge the structural system, other than to mention the basic supports, it has been necessary also to interpolate an adequate system to take care of the off-set stages of the lantern. The squinch-arch and corbeled wall with penetrations seem reasonable in view of numerous precedents. The use of these features would have provided the most obvious excuse for the pierced vaults which would then act as screens to hide the rather unsightly construction. This will be understood if the reader will consult the tower plans and the section where the plan levels are located by letters which correspond to the plans.

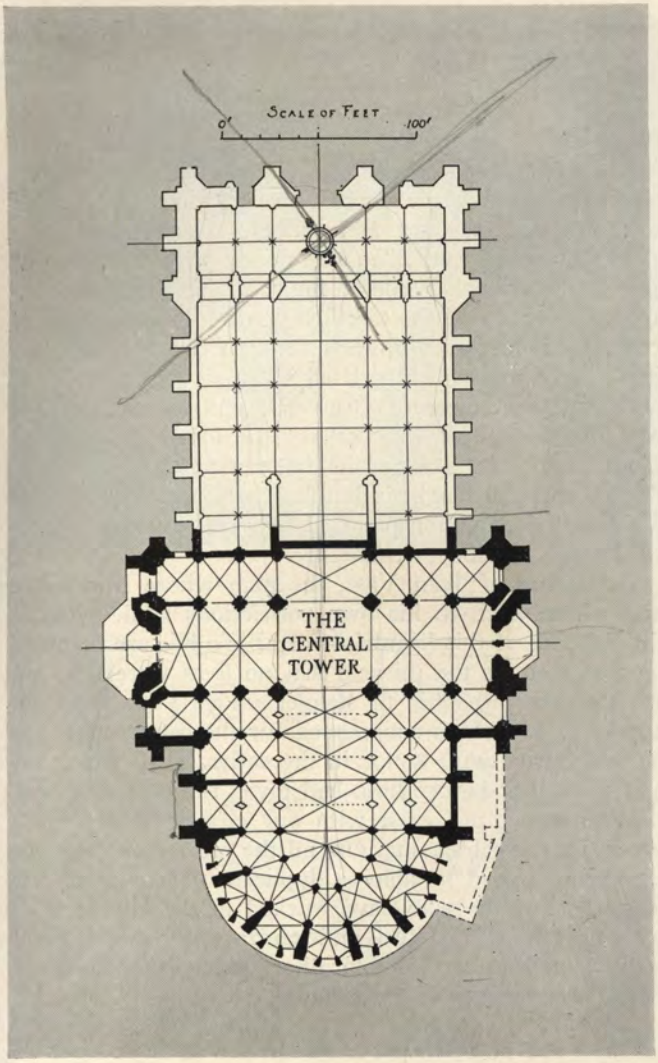
Let us turn to the fascinating drama of the tower.

Whether or not the approaching completion of St. Peter's in Rome stirred up a certain amount of jealousy among the bishop and canons of Beauvais is unknown, but it was at that time that the chapter—possibly abetted by the architects—resolved to erect a tower which should overshadow in height the dome of Michelangelo and the Pyramid of Cheops, thus creating a new record. Even had all the supporting abutments been present, a central tower over the crossing would have been a delicate and difficult problem. These men could count on abutments for only three sides of their tower. Laughing away the advice of cooler heads who had not forgotten previous disasters and in defiance of the void where the sustaining bays of the nave should have been, they proceeded with their mad project.

In 1544 a survey and models were ordered from the carpenters and the masons in order to determine whether the tower should be constructed of stone or of wood.

After long deliberation a compromise was reached by which they settled upon a stone tower to extend one hundred and sixty-one feet above the ridge of the crossing roof and which would be surmounted by a wooden flèche encased with lead. The final plans were accepted in 1560, but it was not until two of the king's masons from Paris had calculated that the crossing piers were capable of carrying the load, and these findings verified by two other experts, that stone was finally ordered.

Then followed nine years of feverish construction under continual menace of uncertainty and danger. Finally, in 1569, the great shaft stood completed, the high-



Solid section of the plan above marks the existing portion of Beauvais Cathedral, shown on the opposite page. The outline indicates probable plan of the non-existent nave. Right: A comparison of building heights—1. The Lost Tower of Beauvais, 500′; 2. Woolworth Building tower, 792′, main portion 400′; 3. Ulm Cathedral (19th century), 529′; 4. Washington Monument, 555′; 5. Pyramid of Cheops (original height), 480′; 6. St. Peter's, Rome (to base of cross), 450′

est structure, and the lightest for its height, which had ever been known. Beauvais could compete with Rome, and Gothic had scored again.

The main features of the tower, according to the authentic records, were as follows: Upon the four piers of the crossing rested four turrets which, passing through the roof, engaged the angles of a square lantern extending forty-eight feet above the roof. Superimposed on the square and set back from its walls, an octagonal drum rose sixty-three feet higher. The sides of the drum were *decoupee en dentelle.* A third stage rose to a further height of fifty feet and was covered with a platform. These three stages were of "finely carved stone" and all were pierced with windows. Upon the platform rested a wooden pyramidal spire measuring ninety-six feet to the base of the wrought iron cross. The lower portion of the spire formed a *donjon.* This contained small bells, and was formed by an open arcade crowned by a ring of sharp-pointed gablets alternating with "little steeples."

"But the interior was still more surprising. Three superimposed vaults, liberally pierced, afforded a view from the floor of the church of three stages of colored windows . . . and still higher, seemingly in the sky, a salient ribbed spherical vault, enriched with painting and gold." It may well have seemed in the sky, for the clear height of this interior was nearly the same as that of the main portion of the Woolworth Building!

In the evening of fête days, a huge lamp was raised to the center of the lantern, illuminating the glorious glass, which became visible from great distances.

On clear days the buildings in Paris over forty miles away could be seen from the summit of the tower.

It is interesting to note that many of the dimensions given in the old French of the records are in fathoms, feet, and inches. The metric system was not adopted until 1799.

For four years Beauvais made the most of her triumph, but this state of mind was increasingly tempered with foreboding. Hardly had the scaffolding been re-

moved when the first signs of weakness made their appearance in the great piers of the crossing. With grave misgivings the canons from time to time called in experts who examined the faults and recommended preventive measures. They kept close watch of the spreading cracks and the movement of the piers. They pointed out that the principal danger lay in the piers on the side of the non-existant nave, one of which finally got out of plumb by five to seven inches. Among other solutions, they recommended that the pier foundations be tied together with a stone chain, and that sustaining walls be built under certain arches. The experts probably urged the building of two bays of the nave, for the first courses of these were actually laid. Beyond this nothing was done and the damage spread beyond control.

On June 9, 1572, they became convinced that it was absolutely necessary to reinforce the piers; but work was not ready to be started until April 17, 1573.

They were too late!

On the evening of that very day came the final warning. A shower of small stones fell from some high part of the tower. But even this ominous sign did not deter the clergy from further use of the church.

At seven o'clock the next morning—Ascension Day—the entire congregation and all of the clergy gathered in the cathedral to celebrate mass and to form a procession which was to march through the streets of the town. The head of the cortège had passed down the steps and gained the square outside. The only persons remaining in the church were a priest and a clerk in one of the chapels, the bearers of a shrine in the transept, and a master-mason who was climbing the tower to investigate its condition. Suddenly the mason felt the structure crack beneath his feet. With a shriek of alarm he rushed down to safety just as the high vaults began to collapse. As these fell they compressed a blast of air which blew the shrine bearers out bodily through the doors.

Then the great piers buckled and gave way, one after another. Before the horror-stricken gaze of the throng in the square, the tower swayed slightly and then dropped vertically through the roof of the crossing in a roaring avalanche of masonry and timber. The windows exploded outward and filled the streets with a shower of jewelled fragments while an impenetrable cloud of choking dust enveloped the terrified people. Another mighty column of dust shot upward through the yawning rent in the roof and slowly drifted away.

So fell the tower of Beauvais; and so was lost for all time the tallest and perhaps the loveliest flower of Gothic art. The news of its fall put an end to the mediaeval race for height in building. Its image stands like a colossal exclamation point, closing the glorious chapter of French Gothic Architecture.

And what of Jean Vast, the man whose iron nerve and whose faith in his own convictions made possible the building of this beautiful folly? To be sure he could be thankful for the miracle that no lives were lost, but what sorrow was his to stagger under! He does not appear to have been condemned for the catastrophe, for he was buried with honor in the cathedral to which he, and his father before him, had given the best they had.

Who among us, even with our electric hoists, compressed air, steel staging, and all the rest of our modern equipment would be able to duplicate such a feat? At least those of us who have worked in the Gothic style without relying on steel and reinforced concrete may well salute him and his brother pioneers—for truly "there were giants in those days!"

BEAUVAIS as it might have been — the most magnificent of all cathedrals. This drawing by Mr. Fletcher suggests the ultimate conception of its builders whose intention was to surpass anything that had ever been built. Failure to build well cost them their dream and lost for all time the tallest and perhaps loveliest flower of Gothic art

Educating Future Clients

The Tennessee Chapter, American Institute of Architects, Takes Architecture Into the Public Schools

BY M. H. FURBRINGER, A.I.A.

Director, Gulf States Division, American Institute of Architects

IN order to fulfill its obligations to society and to be of ever-increasing service to the profession, the Tennessee Chapter of the American Institute of Architects has formulated a program for taking architecture into the public schools. Every architect has long felt the need for an enlightened clientele; for clients who understand the duties and responsibilities of architects, and for a wider appreciation of architecture on the part of the general public.

After careful study of the problem we came to the conclusion that it would be necessary to start with the younger generation. The public schools appeared to offer the only logical channel through which an educational program of this character could be effectively brought to the masses. While we regretted that the means which seemed so close at hand had not been used before, and that the benefits of our work could only be felt in the future, we could not allow this to justify further delay.

With this general concept in mind, a thorough survey of the public school system of the city of Memphis was undertaken by the members of the chapter's Committee on Education. We found a well-established organization of art instructors under a general superintendent, with good equipment, offering the youth of the city many advantages in the study of the arts of painting, music and decoration. Their libraries were equipped with "The University Prints" and various architectural periodicals. Eager and ambitious young minds, inquisitive of the nature of things included in these facilities and striving to connect them with the "Arts" they were studying, constituted a fertile field. The instructors were conscious of this fact, and realizing their inability to instruct properly, had been pleading for some one to assist them in the specialized arts.

Encouraged by these findings, the Chapter decided to formulate a series of lectures to be given by its members as the culmination of a period of instruction by the regular art instructors; the latter using a text prepared through the collaboration of both groups. J. Frazer Smith, vice president of the Memphis Division of the Tennessee Chapter, and Ralph Roudebush, Chairman of the Committee on Education, gave equally of their time and efforts to convince the school authorities of the benefits to be obtained by the pupils under the proposed plan of instruction.

Preliminary work took some time for there was the matter of text, illustrations, instruction and schedules to be worked out, and this had to be done in a way satisfactory to the faculty of the schools, as well as to the architects. A committee representing both interests held joint meetings. A course was planned to cover four senior high schools and seven junior high schools. An analysis of the schools showed that each individual school had to be treated differently. The same text and illustrations could be duplicated in all of the schools, but

the matter of instruction and schedule had to be varied because of the nature of the schools themselves. The texts and illustrations were selected by the Committee, but minor matters had to be discussed with the superintendent and art faculty of each individual school at the time we were ready to begin lectures.

Compiling the text was no small problem. The architect knew the subject, but had to depend on the art instructor to tell him how to put it in the language of the high school audience. The best solution was found in making each architect responsible for his own text. Inasmuch as he used the same subject throughout the eleven schools, he had a chance to change his lecture as his experience indicated was desirable.

TEN illustrations of each architectural style were selected for use with the text thus prepared. These illustrations had to be carefully chosen to cover the subject. For the final lecture, each lecturer could increase the number of illustrations as he saw fit. An interesting collection of colored lantern slides taken from various European examples, as well as from local work (which was always interesting to the audience because of its familiarity) formed part of the final lecture. Care was taken at this time to illustrate the elements of architecture in as many different uses and variations as possible and to explain clearly their varied applications.

In developing the text for the lectures, we drew freely on "The Significance of the Fine Arts," published under the auspices of the Institute and "A History of Architecture" by Rexford Newcomb, Dean of the School of Fine Arts of the University of Illinois, who kindly granted permission to use his book.

Each course consisted of six weeks of class room instruction by the regular art instructors, using text and illustrations furnished to them by the Committee, and terminated with an illustrated lecture by an architect. The school printing department prepared mimeographed copies of each text and distributed them, with illustrations, to each instructor and to the pupils of every class in the school.

In the class room work we met some opposition. There are schools in Memphis which had attempted to prepare pupils for the practice of architecture, and which would construe our course as a friendly gesture to assist and indorse their work in this direction. This we did not concede because we had it emphatically understood that we were not teaching the profession of architecture to a few, but rather the appreciation of architecture to all. This we knew we could not overlook, or our entire efforts would be in vain. To students in these architectural courses, however, the architect was just the man they were looking for, and they never failed to seek interviews. Often these students were astonished to learn that when they finished high school they still had four years of college, four years of experience and a state board examination to pass before they could practice. Many of them had expected to be fitted for professional practice at the completion of their high school career.

Each school presented some distasteful obstacles to overcome. However, we usually found them best solved by diplomatic procedure, rather than by questioning too quickly the intention of the faculty. We had little difficulty in getting proper presentation of our text, for the art instructors were keenly interested and gave our subject unusual attention.

Arranging the schedule brought a fresh experience in each school. A member of the Committee had to call personally at each one, interview the superintendent and art instructor and amicably determine the best week, day and period for the lecture. During the six weeks of class room work, the instructor had covered many grades and classes, but the object was now to get them all together at some non-conflicting period for the final lecture. We finally managed to reach most of the students before we passed on to the next course.

After the preliminary work had been done by the members of the Committee on Education in arranging the program with the school authorities and writing the text for the course, it took but little personal time of each member to deliver the lectures.

Reviewing our accomplishments and summarizing the plan under which this undertaking was developed, we have come to the following conclusions. The continued interest displayed by the instructors and the pupils themselves is sufficient evidence that we have chosen the most fertile field for an educational program if we wish to educate future clients. It is impossible—at least so it seems to me—to obtain a larger audience at a more receptive age in any other way. In spite of the efforts necessary in the early stages to correlate the various elements into a well presented and workable plan, it all seems very simple now. Much, of course, remains to be done. Good pictures should hang on the walls of the class rooms, or better still, each school should have the upper story corridor arranged as an art gallery in which pictures selected by a competent jury should be placed. This is part of our plan. We also expect to have a collection of pictures form a traveling exhibit to go from school to school. The members of the Chapter have donated the pictures and when the circuit has been completed, these pictures will be distributed and presented to the schools.

EVERY undertaking must have a beginning, and while we can hardly lay claim to great achievement, nevertheless we have taken the first step, and that is something. Besides, it was great fun, cost nothing and gave us an opportunity to tell future clients some of the things we hesitate to say to their elders, at present at least. We therefore recommend to other chapters and societies the adoption of this plan so that in the future there will be no regrets over a neglected opportunity. At least this generation of architects will then have discharged an obligation which we owe the profession and posterity.

This practical plan of taking architecture into the public schools has been in effect for two years. The experience gained by the Tennessee Chapter is available to other architectural groups and should be utilized to spread this educational program throughout the schools of every state

MOTHER EARTH

MAN AND HIS INVENTIONS

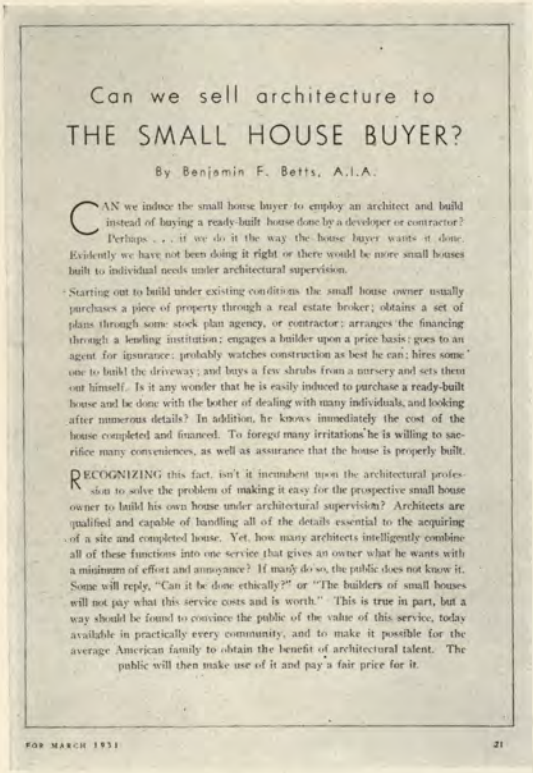
TWO GRANITE PYLONS

RALPH STACKPOLE, SCULPTOR

Photos by Gabriel Moulin

San Francisco Stock Exchange — Miller & Pflueger, Architects

It required two years to carve these pylons, each twenty-one feet high. They have only recently been completed and set



Can we sell architecture to
THE SMALL HOUSE BUYER?

By Benjamin F. Betts, A.I.A.

CAN we induce the small house buyer to employ an architect and build instead of buying a ready-built house done by a developer or contractor? Perhaps . . . if we do it the way the house buyer wants it done. Evidently we have not been doing it right or there would be more small houses built to individual needs under architectural supervision.

Starting out to build under existing conditions the small house owner usually purchases a piece of property through a real estate broker; obtains a set of plans through some stock plan agency, or contractor; arranges the financing through a lending institution; engages a builder upon a price basis; goes to an agent for insurance; probably watches construction as best he can; hires some one to build the driveway; and buys a few shrubs from a nursery and sets them out himself. Is it any wonder that he is easily induced to purchase a ready-built house and be done with the bother of dealing with many individuals, and looking after numerous details? In addition, he knows immediately the cost of the house completed and financed. To forego many irritations he is willing to sacrifice many conveniences, as well as assurance that the house is properly built.

RECOGNIZING this fact, isn't it incumbent upon the architectural profession to solve the problem of making it easy for the prospective small house owner to build his own house under architectural supervision? Architects are qualified and capable of handling all of the details essential to the acquiring of a site and completed house. Yet, how many architects intelligently combine all of these functions into one service that gives an owner what he wants with a minimum of effort and annoyance? If many do so, the public does not know it. Some will reply, "Can it be done ethically?" or "The builders of small houses will not pay what this service costs and is worth." This is true in part, but a way should be found to convince the public of the value of this service, today available in practically every community, and to make it possible for the average American family to obtain the benefit of architectural talent. The public will then make use of it and pay a fair price for it.

FOR MARCH 1931 21

Architecture Can Be Sold to the Small House Buyer

In Los Angeles, Architects Exhibits, Inc., has found one way to bring architects and small house buyers together. It is proving that stock plans are not essential as a medium to attract the public and provides a service that simplifies the small house buyer's problems and safeguards his interests

BY NATT PIPER
Architect, Long Beach, California

IT is a rejuvenating experience for an architect practicing in the small house field, or in any other field, for that matter, to stand for an hour and see how many persons visit the exhibition galleries of Architects Exhibit, Incorporated, situated in Barker Brothers' store in Los Angeles. There, in the heart of the retail business district, on one of America's busiest streets and in one of the largest home furnishing stores in the world, a group of architects headed by Herbert J. Mann is contacting more prospective clients in one day than the average "two-board" office will have the opportunity of reaching in a year.

Architects Exhibit is an organization of public-spirited individuals who are interested in civic betterment. None of its stockholders are architects, nor are they financially interested in the construction industry. The corporation is not connected with any material dealer or contractor, nor is it supported by any of the construction industries. Its income is derived from architects who receive work through the agency of the Exhibit. These architects return a portion of the fees secured from their clients to Architects Exhibit as a sustaining contribution which defrays the cost of maintaining the organization.

The corporation has several advisory committees, but they are for consultation purposes only and are not vested with any power of executive action. And though Herbert J. Mann, the corporation's president and general manager, is an architect, he is no longer in active practice. He is therefore not working in competition with other architects, though his services as consultant are available if they are needed.

Mr. Mann, through his knowledge of architectural practice in the small house field, was appointed chairman of the Small Buildings Committee of the State Association of California Architects. As chairman, and later as director in the same society, he led a vigorous protest against the endorsement of plan bureaus, stock plan nostrums, free clinics and like movements based upon the marketing of partial architectural service with reduced fees as the bargain tag. A three year intensive study of how to bring together the small house builder and the architect resulted in the formation of Architects Exhibit, Incorporated.

The structure of this organization is based upon the following premises:

First: The small house owner can—most emphatically *can*—afford to pay for full architectural service.

Second: The American public will attend an exhibition of good house design. Each individual expects to build a house some time; he is curious to see the newest trend in "styles."

Third: The average small house builder for many reasons hesitates to visit an architect in his own office; and architects cannot readily reach the large number of persons who propose building small structures.

Fourth: The small house field offers an immense, untouched and fertile field for architects to cultivate.

Architects Exhibit is not operated as a plan service or plan bureau. It performs no architectural functions. The corporation simply provides exhibition rooms, publicity and clerical staff for the exhibit. Architects act as salesmen, two or three being present each day to greet the public and to answer questions. Clients secured through the medium of the exhibit are then handled as individual clients by individual architects. The exhibition rooms may be used to meet clients for future conferences, but the corporation plays no further part in the matter.

All architects exhibiting are required to subscribe to the Standards of Practice which includes the Code of Ethics of the American Institute of Architects. Since the full fee is charged, and the work is performed by

ARCHITECTS EXHIBIT, INC.
LOS ANGELES, CALIFORNIA

March 1st, 1933, 193

Mr. William Smith

The undersigned proposes to furnish architectural services as outlined below in paragraphs 1,2,3
for a 5 room brick residence and garage
to be erected on the following premises:
Lot 1 Block 15 View Park Subdivision

1. **Preliminary Sketches:**—This service includes the necessary conferences, inspection and study of the building site, preparing studies of floor plans and elevations, and preliminary estimate of cost.
2. **Working Drawings and Specifications:**—This service provides the necessary information for obtaining bids, letting contracts and constructing the building. This includes the preparation of floor plans, elevations, and interiors, large scale and full size architectural and structural details, complete typewritten specifications and five complete sets of blueprints and specifications.
3. **Supervision of Construction:**—This service includes the obtaining of competitive bids from reputable general contractors, preparation of contract documents, the general supervision and inspection of the work, the approval of all bills for payment to the Contractor, the keeping of accounts and exercising of all usual precautions to protect the owner's interests during the entire building operation.
4.

For the above services the fee will be five hundred dollars ($ 500.00)
payable as follows:
$ 100.00 on completion of preliminary sketches,
$ 200.00 on completion of working drawings and specifications.

The balance of the total fee shall be payable in monthly installments, based upon and in direct proportion to the progress of the work of construction, until fully paid at the completion of the entire work.

Should this project be abandoned or delayed, for any reason, after the undersigned has been authorized to proceed, there shall then be due and payable to the undersigned the part of the fee proportionate to the amount of work completed to date of said abandonment or delay, based on the payments outlined above.

It is agreed that Herbert J. Mann will be available as Consulting Architect without additional fee.

Accepted:
John Jones
Architect.
William Smith
Owner
604 - First St
Address
Trinity 9401
Phone
March 1-1933
Date

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individual architects in accordance with the ethics of the profession, there is no need to limit the project to houses of any particular cost or size. Consequently, it is possible for the corporation to exhibit work of any size which requires the services of an architect. This is the vital distinction between this project and many other small house bureaus and clinics.

Most small house bureaus make a distinction for services for a house costing $5,000 and under, and one costing more than this amount. A man building a house under $5,000 can obtain architectural services for possibly $50.00, while one costing over $5,000 would incur a fee of possibly ten times that amount. This has been a serious mistake in dealing with this problem.

Architects Exhibit which handles approximately one thousand visitors per month, has established the following facts:

First: That the public will pay for an architect's services when they clearly understand the extent and nature of the services.

Second: A house designed by an architect does not cost any more, including his fee, than a contractor's house without an architect's services.

Third: The Exhibit, by bringing the building public in direct contact with architects, constitutes an excellent medium for the education of the public. Personal contact with architects appears much more desirable than printed slogans such as "Employ an Architect" and others.

Sensing the opportunity to enlarge architectural service and at the same time to tie the architect more securely into the undertaking from its beginning, the corporation offers its visitors a complete range of professional assistance:

(a) Prospective clients who have no lot are offered the services of an architect to assist them in selecting a desirable site. This service has been received with such favor by the public that at times it has been difficult to keep up with the demand.

(b) After the property is purchased, and in those cases where the client already owns property, an architect will visit the site with the client and offer suggestions regarding the type of house and general scheme best suited to the property.

(c) If the client is now ready for preliminary sketches, an agreement is entered into with the architect for the preliminary sketches at a definite fee, gen-

erally one per cent of the estimated cost. No sketches are furnished without a definite agreement as to fee. The preliminary sketches are accompanied by a preliminary specification and a preliminary estimate of cost from a reliable contractor.

(d) If the client requires financing, information regarding all types of loans is available. Various types of loans are discussed and a meeting of a representative of a mortgage company or bank is arranged with the client.

(e) When authorized to do so, the architect prepares working drawings and specifications, accepts bids from contractors and supervises the construction. Assistance and advice on landscaping and interior furnishing are also included in the corporation's service.

The home builder can thus secure complete information, from the purchase of the lot to the completely furnished house, at one place.

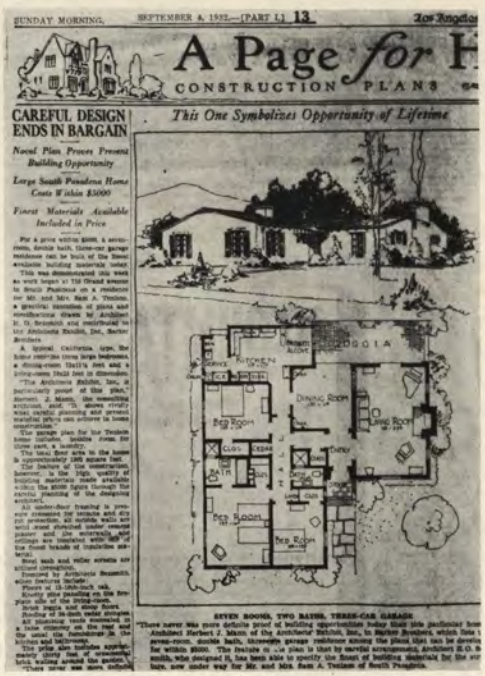
The contract form used by the Exhibit has been adapted from the standard document of the American Institute of Architects with all legal phraseology omitted. Experience has shown that a prospective client will readily sign this simple agreement whereas the more complicated Institute form often frightens him away.

One of the most striking examples of the success of the undertaking is the case of Mrs. D. This lady, a supervisor in the Los Angeles County School system, brought in a plan drawn by a contractor which she said did not come up to her expectations. While it was a modest cottage she felt it lacked architectural merit. The price the contractor had quoted, $2300, was the sum she wished to expend. After she had been convinced of the value of full architectural service for the small residence, the project passed through the usual procedure in the hands of an architect. The contract was let for $1850. She then paid $200 to the architect, which was the lump sum fee charged in this case and still made a clear saving of $250—and the cottage had architectural merit!

Another client, a man from a neighboring state, saw sketches in one of the Sunday newspapers and came in to buy a plan book. While he was still skeptical at the end of the first interview, he did agree to pay $50 for a preliminary sketch. The preliminary study was made and the client again came to Los Angeles. During the second interview, he was not only fully "sold," but was delighted with the way his project had been developed. One of the biggest selling points used in this instance was the display and explanation of a complete set of working drawings the architect had made for a house of like size. In a few weeks the job was let for about $10,000. Within a month after construction had started, this man brought in a friend from the same state, who is now well on his way in the planning of a much larger house.

An accurate account is kept of the number of visitors to the exhibit, prospective clients, contracts obtained, and amount of publicity received by the corporation as well as that received by individual architects. The newspapers in Southern California have been generous in featuring the work of Architects Exhibit and in publicizing architects' sketches and articles about small houses. Architects whose work has been featured in the newspapers are amazed at the news value reporters have found in "dry" architectural "stories." Their eyes have been opened to the advertising value of their sketches and their names in the newspapers. The press has been generous with its space on Sundays and on Mondays the exhibition rooms are crowded. One architect received from a single newspaper issue over thirty calls; he obtained six bona fide prospects and expects most of them to proceed. He writes, "Not only was I dumbfounded, but I was actually embarrassed when *The Times* printed such glowing things about me and my work."

Never was there an opportunity to do such a tremendous amount of missionary work under more advantageous conditions. And, Los Angeles architects are performing a duty in telling their story to persons who have always thought they had to depend upon the jerry builder. Architects Exhibit is acquainting thousands of visitors with proper architectural procedure and with good design in house work. This will return eventually as a big dividend for every architect in this district.



SUNDAY MORNING, SEPTEMBER 4, 1932.—[PART I] 13 Los Angeles

A Page for H

CONSTRUCTION PLANS

CAREFUL DESIGN ENDS IN BARGAIN

Novel Plan Proves Present Building Opportunity

Large South Pasadena Home Costs Within $5000

Finest Materials Available Included in Price

This One Symbolizes Opportunity of Lifetime

SEVEN ROOMS, TWO BATHS, THREE-CAR GARAGE

Architects' sketches have news value, particularly when they form a part of a public exhibition which stimulates a general interest in civic improvement. Good publicity like this means educating the public to the value of proper architectural procedure and good house design. To the architect it is a dignified form of advertising and an excellent aid in getting actual commissions with a fair price for his services as a professional man

THE ARCHITECTURAL LEAGUE OF NEW YORK

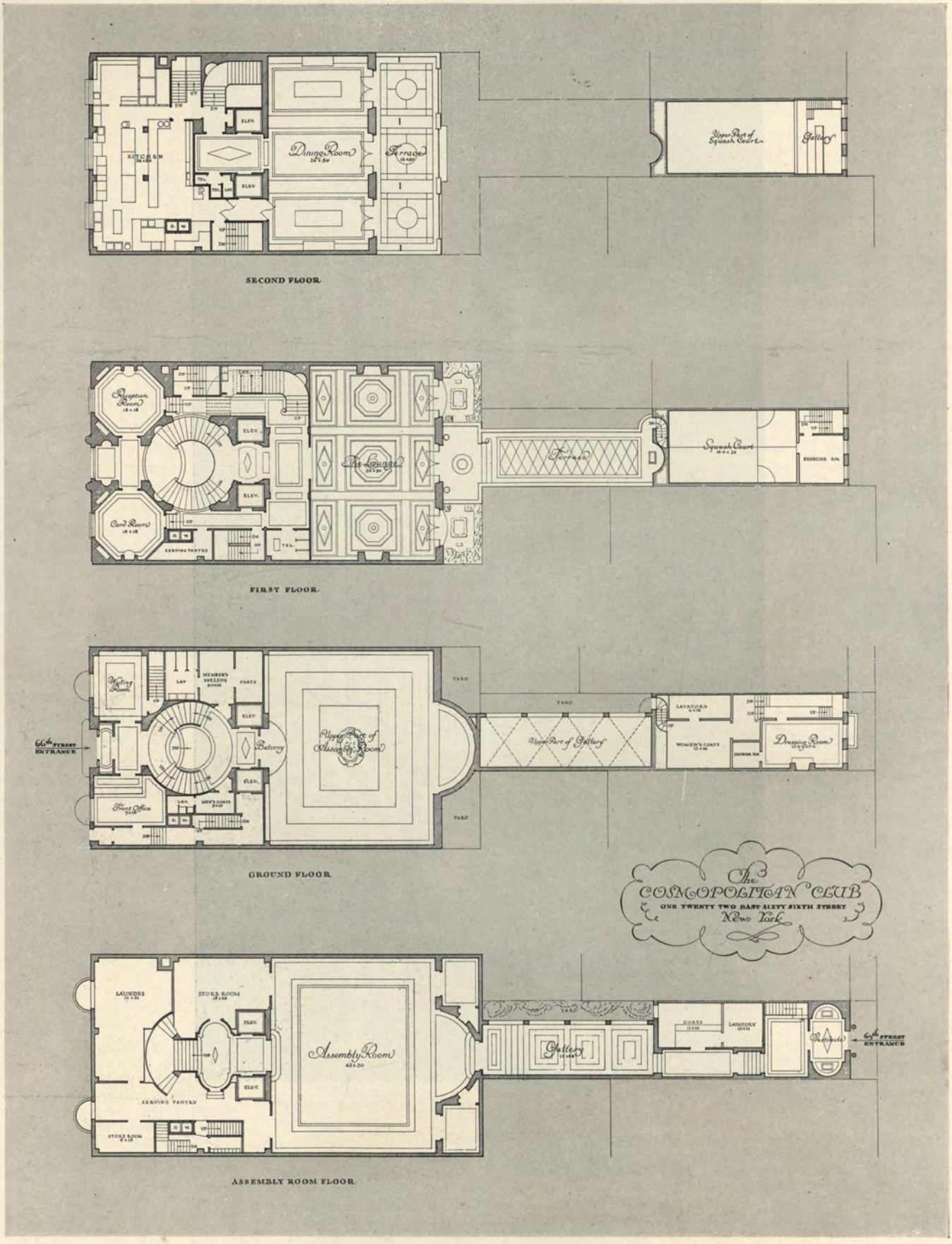
1933 GOLD MEDAL AWARD

Mr. Ellett was awarded one of two gold medals by the Jury for the Medal of Honor "for the design of the Cosmopolitan Club; a fresh and personal interpretation, beautiful in its simplicity of form and material"

THE COSMOPOLITAN CLUB, NEW YORK

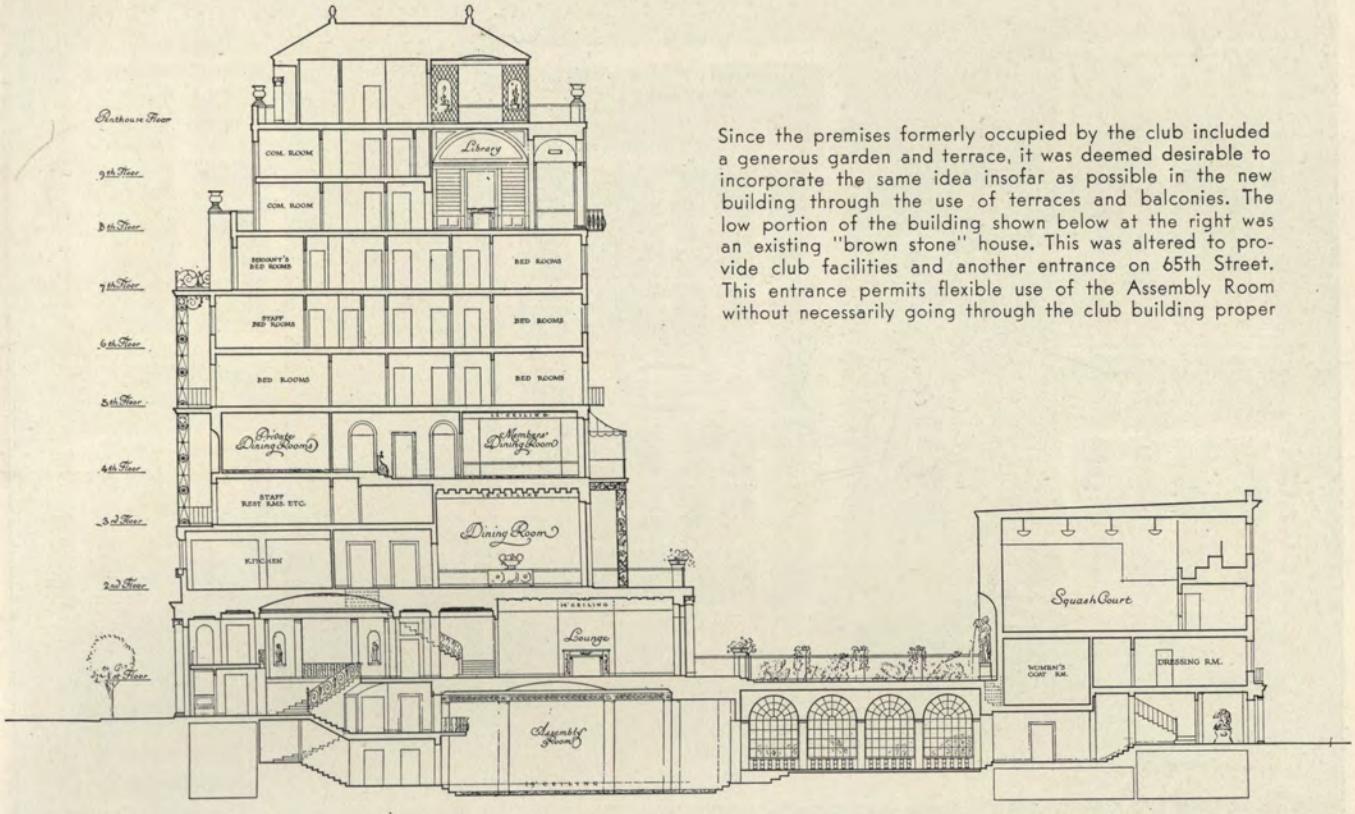
THOMAS HARLAN ELLETT, ARCHITECT

Photographs by Samuel H. Gottscho



Floors above the second contain private dining rooms, committee rooms, library and bedrooms

THE COSMOPOLITAN CLUB, NEW YORK. THOMAS HARLAN ELLETT, ARCHITECT



LONGITUDINAL SECTION

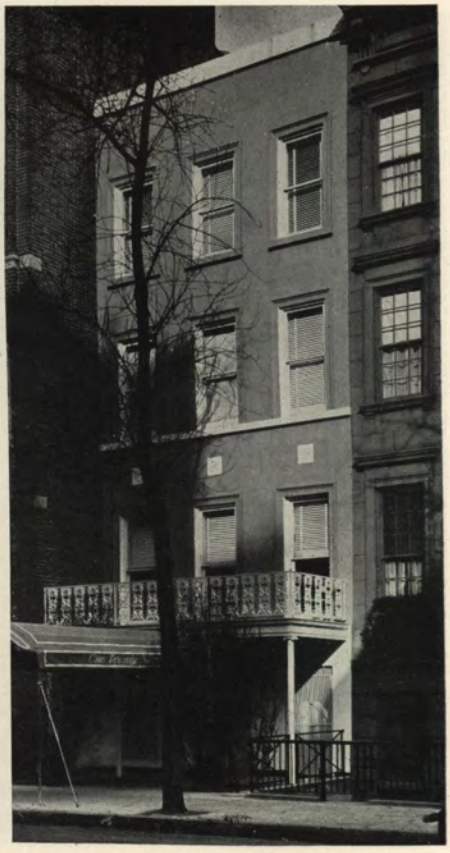
Since the premises formerly occupied by the club included a generous garden and terrace, it was deemed desirable to incorporate the same idea insofar as possible in the new building through the use of terraces and balconies. The low portion of the building shown below at the right was an existing "brown stone" house. This was altered to provide club facilities and another entrance on 65th Street. This entrance permits flexible use of the Assembly Room without necessarily going through the club building proper

Detail of Dining Room Terrace

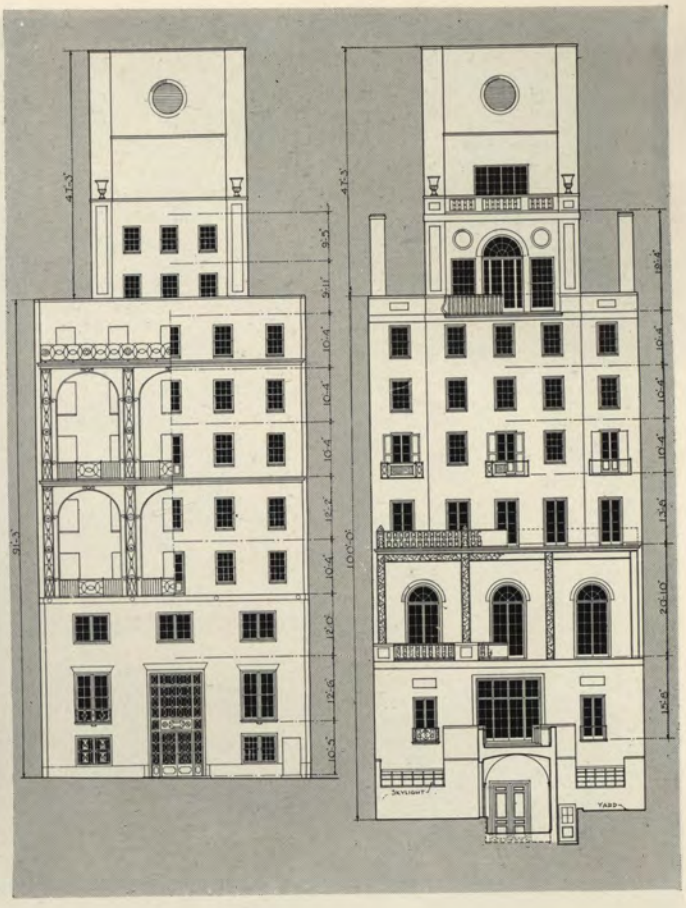
Detail of 65th Street Entrance

THE COSMOPOLITAN CLUB, NEW YORK. THOMAS HARLAN ELLETT, ARCHITECT

Detail of entrance on 66th Street shown above. At right: 66th and 65th Street facades. Exterior of new building, common brick painted gray; trim painted white. Ironwork on front painted white; on rear, painted dark brown. First story trim, marble. Copings and stills, blue stone. Parapet urns, copper painted white. Brown stone of 65th Street facade painted gray with white trim. Grilles and balconies, wrought and cast iron

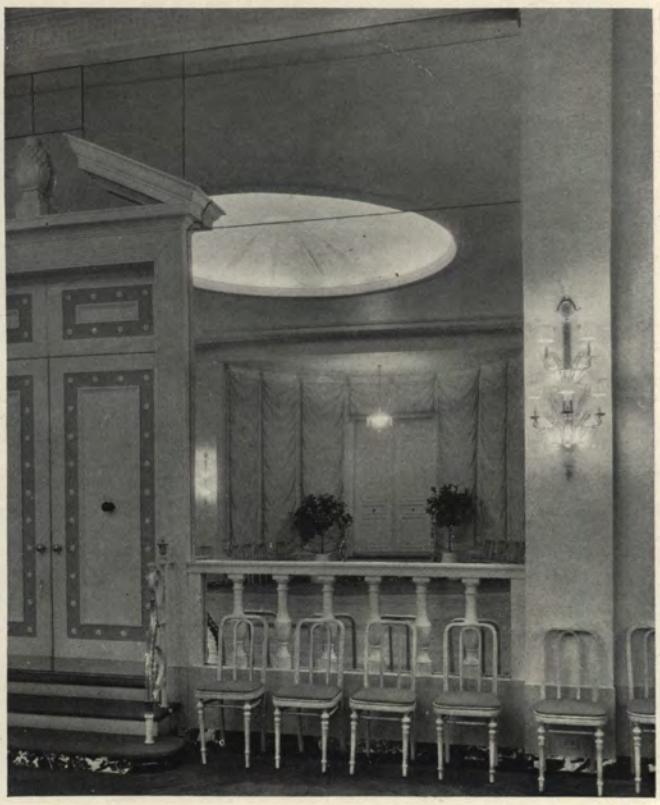


THE COSMOPOLITAN CLUB, NEW YORK. THOMAS HARLAN ELLETT, ARCHITECT



Detail of upper stories of 66th Street facade at left above. At right above, street and rear elevations of new building. At left, detail of lower stories of rear of new building showing terrace above gallery which connects the 65th Street entrance building with the new structure. The terrace is paved with flagstone. The floor of the Dining Room balcony terrace is of marble and black slate; balcony rail, cast iron

THE COSMOPOLITAN CLUB, NEW YORK. THOMAS HARLAN ELLETT, ARCHITECT



At top: Entrance Hall. Stairs, soapstone risers and treads; handrail, wood, wrought iron and brass. Floor, gray terrazzo. Walls, white. Left, above: Dining Room. Floor, gray, green, black and white rubber tiles. Walls, yellow. Wood trim and ceiling, white. Furniture, dark brown. Right above: Assembly Room. Walls and woodwork, oyster white; door panels, gray· bracket lights, gilt and crystal. On facing page: Gallery Entrance to Assembly Room

Above: The Lounge. Walls and woodwork painted buff and white. Fireplace, white marble. Fireplace shelf, Levanto marble. Room base, Levanto marble. 18th century wall paintings. At right: The Library. Woodwork, butternut with gold leaf ornament. Plaster ceiling painted white. Floor, cork in two shades of brown. Fireplace on opposite side of room is of pink marble

THE COSMOPOLITAN CLUB, NEW YORK. THOMAS HARLAN ELLETT, ARCHITECT

Requirements For State Registration of Non-Resident Architects

By C. JULIAN OBERWARTH, A.I.A.

Secretary and Treasurer, Kentucky State Board of Examiners and Registration of Architects

NUMEROUS requests for information on the requirements for registration of architects in various states has for some time made it apparent that an analysis of such requirements would be of value. At the request of American Architect Mr. Oberwarth prepared the following notes and chart as an aid to a quick determination of the requirements of all states and territories having laws governing the practice of architecture. Both notes and charts have been condensed. Complete information on the requirements of any particular state or territory can be obtained by addressing the Secretary of the Board of Registration of that state.—THE EDITORS.

ARCHITECTS are warned against seeking work or starting practice in any state until legally permitted to do so. Violators can be arrested and punished—with rejected applications, blemished records and embarrassments as added penalties.

Applications should be made in advance of contemplated practice. It is out of reason to expect a board to conduct costly proceedings for one man because of his lack of foresight in making application. It is unreasonable to expect a technical examining board, liable to the courts for its actions, to grant registration without a full record of the applicant, the assembling of which requires time.

Avoid personal interpretations of any state's law. All have been fully construed by their respective attorneys general and other authorities. The law in some states has a provision exempting buildings under a specified cost. This does not admit non-resident architects to this class of work without registration. There is a provision that such plans must be signed by the author with the true title of his principal occupation in life; another, that it is illegal for anyone not registered to use the title of "Architect."

"Reciprocity," as popularly conceived, is non-existent and, with but the few exceptions, architects registered only by exemption have little or no standing in any but their own state.

The provision under which transfers are granted is usually a clause which says in effect, that the board *may* grant reciprocity to men registered in another state if the requirements are equal and equal privileges are granted. Under this procedure each applicant must be considered individually—for ability, character, education, experience, ethics and other qualifications—and this record compared with the general standard established by each board. If his record compares favorably in all respects, registration is granted. If he is deficient, he is denied registration or required to make up the deficiencies. Except as noted on the chart, states pay little attention, therefore, to "reciprocity."

Each board reserves the right of final decision and the right to name the conditions for erasing deficiencies. Each is the sole judge of what constitutes an "Equivalent"; what "Experience" is acceptable; what schools are "Approved"; and what shall be deemed "Equal," "Satisfactory," or "Reputable."

Before making application for transfer, the architect should submit to examination in his own state. If he expects to transfer to states where the requirements are higher, he should take the "Standard N. C. A. R. Examination."

Non-registered men can not collect fees as architects in court actions, qualify as expert witnesses or make valid contracts.

NOTES ON THE NATIONAL COUNCIL OF ARCHITECTURAL REGISTRATION BOARDS

Address of Council: Suite 2300, 175 West Jackson Boulevard, Chicago, Ill.

Instructions for making application through the Council: Send written request for proper blanks and enclose: 1. List of states in which registered and, in each case, whether by exemption of examination. 2. Outline of professional experience, giving names of offices, dates and official duties with each. 3. Certified check for $20.00 payable to "N. C. A. R. Boards." 4. Certified check for application fees payable to the state board.

The Council office, after seeing to proper completion of application forms and collection fees, makes the same disinterested investigation of applicant's record as the state board would otherwise make. The completed material is forwarded to the state board for action. *The Council does not give examinations or make any recommendations as to disposition of applications.*

By applying through the Council each applicant pays for the investigation of his own record which, in view of the fact that most boards operate entirely upon fees paid by architects, is fair and just. The state board can act more promptly on applications thus submitted—often by immediate vote through letter ballots. Also, the original record of applicant's investigation by the Council is preserved by them for transfers to other states at a cost of $10.00 for each such additional transfer, thus saving the time ordinarily required for investigation by the board.

The "Standard N. C. A. R. Examinations" are designed expressly for those wishing to transfer to states where the requirements are higher. They are similar to state examinations, are given in both Junior and Senior classes and are *taken before the applicant's home board.* They are designed to meet the standards of every state, must be approved by the Council before being given, may be entered only with their permission and, when successfully completed, carry the official provision, "Registered by Standard N. C. A. R. Examination."

STATE (1) OR TERRITORY	BOARD	SECRETARY and ADDRESS	REQUIRED for REGISTRATION of NON-RESIDENT ARCHITECTS (6)		
			WITH (7) EXAMINATION CREDITS	WITHOUT (8) EXAMINATION CREDITS	SPECIAL (12) and TEMPORARY
ALABAMA	State Board of Registration of Architects	Harry H. Jones Shepherd Building Montgomery	No distinction between transfer with or without examination credits. Registration is granted to: (a) Architect registered and in good standing in any state, or (b) Member A.I.A. in good standing or (c) Graduate approved college of architecture + 1 year practical experience in office of reputable architect		Temporary registration upon receipt of full application and fees and approval by Secretary and 2 other Board members. (13)
ARIZONA	State Board of Registration for Architects, Engineers Land Surveyors & Assayers (2)	V.O. Wallingford Box 1035 Phoenix	When applicant's record of practice, character and examination in own state is adjudged satisfactory (11)	NONE	Temporary permits issued to registered architects, upon request, for single projects requiring 90 days or less including construction. No fee required
CALIFORNIA	State Board of Architectural Examiners (2)	Northern District, C. J. Ryland, 450 McAllister St, San Francisco. Southern District, Harold C. Chambers, 907 State Bldg., Los Angeles.	NONE	NONE	Temporary registration for one stipulated structure upon evidence of qualifications satisfactory to Board. Fee $25.00 Apply direct.
COLORADO	State Board of Examiners of Architects (2)	Frank W. Frewen, Jr. 316 Patterson Bldg Denver	Same age requirement + satisfactory record of practice and character + equivalent examination. (11)	Graduation from approved college of architecture + 4 years, practical experience (or equivalent) + (a) Registration in state having similar law, or (b) Member A.I.A. in good standing.	NONE
DISTRICT of COLUMBIA	Board of Examiners and Registrars of Architects (2)	Robert F. Beresford 1115 Connecticut Ave., N.W. Washington, D.C.	Same age requirement + satisfactory record of practice and character + equivalent examination (9) (11)	NONE	NONE
FLORIDA	State Board of Architecture (2)	Mellen C. Greeley Room 500 No. 218 W. Adams St. Jacksonville	No distinction between transfer with or without examination credits. Registration is granted to: (a) Architect registered and in good standing in any state, or (b) Member A.I.A. in good standing or (c) Graduate approved college of architecture +2 years subsequent experience as principal, or (d) 10 years, satisfactory experience as principal when from state having no registration law.		Temporary registration issued by Sec. if requested, upon receipt of full application and fees, if applicant's record contains satisfactory evidence of qualifications (13)
GEORGIA	State Board for the Examination and Registration of Architects	R. C. Coleman Department of State Atlanta	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination (9) (11)	NONE	NONE
IDAHO	Department of Law Enforcement (2)	Emmett Pfost (Commissioner) State House Boise	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination + personal appearance before this Board. (10)	NONE	NONE
ILLINOIS	Architectural Examining Committee (2)	Emery Stanford Hall Suite 2300, 175 W. Jackson Blvd. Chicago	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination. (9) (11)	NONE	NONE
INDIANA	State Board of Registration for Architects (2)	J. H. Owens Room 330 State Capitol Indianapolis	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination. (9) (11)	NONE	NONE
IOWA	State Board of Architectural Examiners (2)	William L. Perkins Ensley Building Chariton	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination. (11)	NONE	If registered by examination in state having equal requirements, temporary permit issued upon receipt of full application made thru N.C.A.R.B. (13)
KENTUCKY	State Board of Examiners and Registration of Architects (2)	C. Julian Oberwarth 301 W. Second St. Frankfort	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination (9) (11)	Record of outstanding practice and character	NONE
LOUISIANA	State Board of Architectural Examiners (2)	Chas. A. Favrot 410 Nola Bldg. New Orleans	NONE (6)	NONE	Temporary registration upon receipt of full application and fees and approval by 2 Board members (13)
MICHIGAN	State Board of Examiners for Registration of Architects, Engineers and Surveyors (2)	C. T. Olmsted 1043 Book Building Detroit.	When applicant's record of practice, character and examination in own state is adjudged satisfactory (10)	NONE	NONE
MINNESOTA	State Board of Registration for Architects, Engineers and Land Surveyors (2)	William W. Tyrie 620 New York Bldg St. Paul	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination (9) (11)	NONE	Temporary permits to newly established residents upon filing full application and fees. (13)
MISSISSIPPI	State Board of Architecture	E. L. Malvaney P.O. Box 752 Jackson	No distinction between transfer with or without examination credits. Registration is granted to: (a) Architect registered and in good standing in any state, or (b) Member A.I.A. in good standing or (c) Architect of long established practice in own community or (d) Graduate approved college of architecture + 2 years, satisfactory experience as principal.		NONE
MONTANA	State Board of Architectural Examiners (2)	W. R. Plew State College Bozeman	No distinction between transfer with or without examination credits. Registration is granted to: Architect registered and in good standing in any state.		Temporary permits issued by President, if requested, upon receipt of full application and fees, if satisfied as to applicant's qualifications (13)
NEW JERSEY	State Board of Architects (2)	J. Osborne Hunt 219 E. Hanover St. Trenton	NONE (6)	NONE	NONE
NEW MEXICO	State Board of Examiners for Architects	John Gaw Meem P.O. Box 628 Santa Fe	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination (9) (11)	Member A.I.A. in good standing	Temporary permits issued by Sec. if requested, upon receipt of full application and fees, if applicant's record contains satisfactory evidence of qualifications (13)
NEW YORK	State Board of Examiners and Registration of Architects (2)	Wm. P. Bannister 339 Lexington Ave. New York	NONE (6)	NONE	NONE
NORTH CAROLINA	State Board of Architectural Examination & Registration (2)	Harry Barton Greensboro	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination (9) (10)	NONE	Temporary registration for one stipulated commission upon receipt of letter from Sec. of applicant's home board advising that he is qualified to practice. Fee $25.00 Apply direct.
NORTH DAKOTA	State Board of Architecture	Robert A. Ritterbush 209 N. 7th St. Bismarck	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination (9) (11)	NONE	NONE
OHIO	State Board of Examiners of Architects (2)	R. C. Kempton 1020 Atlas Building Columbus	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination (9) (11)	(a) Exemptions which apply to Ohio architects seeking registration in applicant's home state will be accepted in Ohio, or (b) Graduate approved college of architecture + 3 years, satisfactory experience.	Temporary permits to newly established residents upon filing full application and fees. (13)

HOW APPLICATION MUST BE MADE	APPLICATION FEE (4)	ANNUAL RENEWAL FEE (5)	WHEN APPLICANT MAY START PRACTICE	EXAMINATION of RESIDENT APPLICANTS — PRELIMINARY REQUIREMENTS FOR ADMISSION (14) — JUNIOR CLASS — AGE	JUNIOR CLASS — EDUCATION	JUNIOR CLASS — EXPERIENCE (15)	SENIOR CLASS	THE EXAMINATIONS (16) — JUNIOR (17)	SENIOR (18)	PASSG GR.	STATE (1) OR TERRITORY
Direct to Board	$25.00 Returned in full if registration is denied	$5.00	When notified of approval for temporary or permanent registration	No age requirement	NONE	NONE	—	2 8 hr. days 1 9 hr. day 1 4 hr. day	NONE Same as Junior Exam.	70	ALABAMA
Direct to Board	$15.00	$5.00	Upon receipt of full application and fees (13)	25	Graduation from technical college	2 years; (4 years' additional accepted in place of college graduation)	—	2 8 hr. days	NONE Same as Junior Exam	70	ARIZONA
Thru N.C.A.R.B. only	$15.00 + $10.00 when registration granted	$6.00	Only after temporary or permanent registration officially granted	No age requirement	Graduation from college of architecture (or each year accepted as 1 of 10 yrs. experience)	4 years; (or 10 yrs. if not college graduate)	Previous passing of Junior Exam. equivalent to California's	4 8 hr. days supplemented by general oral Exam.	1 hour oral	70	CALIFORNIA
Thru N.C.A.R.B. only	$25.00 $15.00 returned if registration denied	$10.00	Only after permanent registration officially granted	21	NONE	NONE	—	4 7½ hr. days	NONE Same as Junior Exam	70	COLORADO
Thru N.C.A.R.B. or Direct	$10.00 + $1.00 per month from date of granting to April 30th	$5.00	Upon receipt of full application and fees (13)	20	NONE	NONE	10 years' satisfactory experience as principal	4 8 hr. days	1 hour oral	75	DISTRICT of COLUMBIA
Thru N.C.A.R.B. or Direct (3)	$5.00 + $16.00 when registration granted	$5.00	When notified of approval for temporary or permanent registration	21	NONE	NONE	10 years' satisfactory experience as principal	3 8 hr. days 1 6 hr. day	2 hours oral	75	FLORIDA
Direct to Board	$25.00	$2.00	Only after permanent registration officially granted	21	High school graduate + math, Hist. and Langs. as prescribed (or equivalent)	NONE	10 years' satisfactory experience as principal	1-4½ hr. day 2-7½ hr days 1-3½ hr day	1 hour oral	75	GEORGIA
Thru N.C.A.R.B. only	$25.00 Returned in full if registration is denied	$2.00	Only after permanent registration officially granted	21	High school graduate + Math and English as prescribed (or equivalent).	3 years;	10 years; satisfactory experience as principal	1 - 6 hr day 2 - 7 hr. days 1 - 8 hr. day	NONE same as Junior Exam.	75	IDAHO
Thru N.C.A.R.B. or Direct (3)	$10.00 + $5.00 when registration granted	$1.00	Only after permanent registration officially granted	21	High school graduate (or equivalent)	3 years; (graduation from college of architecture accepted as 3 years)	10 years; satisfactory experience as principal	3 8 hr. days	1 hour oral	75	ILLINOIS
Thru N.C.A.R.B. or Direct (3)	$25.00	$25.00	Only after permanent registration officially granted	21	Graduate of High School & College of Architecture (or equivalent).	1 year	10 years; satisfactory experience as principal	3 8 hr. days	1 hour oral	75	INDIANA
Thru N.C.A.R.B. or Direct	$15.00	$10.00	When notified of approval for temporary or permanent registration	21	High school graduate + Math Hist. and Lang's as prescribed (or equivalent)	NONE	10 years; satisfactory experience as principal	3 7½ hr. days	1 hour oral	70	IOWA
Thru N.C.A.R.B. only	$25.00	$10.00	Only after permanent registration officially granted	21	High school graduate (or equivalent)	NONE	10 years; satisfactory experience as principal	3 8 hr. days 1 9 hr. day	1 hour oral + 4 hours written	75	KENTUCKY
Direct to Board	$10.00 $5.00 returned if registration denied	$5.00	When notified of approval for temporary or permanent registration	21	Grammar School graduate	NONE	—	3 8 hr. days	NONE Same as Junior Exam.	70	LOUISIANA
Thru N.C.A.R.B. Direct only when not registered in any state (3)	$20.00 Returned in full if registration is denied	$1.00 Payable $5.00 every 5 years	Only after permanent registration officially granted	21	Graduation from college of architecture. (or equivalent)	2 years; (or equivalent) 4 yrs.' additional accepted in place of college graduation)	—	1 8 hr. day 2 10 hr. days	NONE Same as Junior Exam.	70	MICHIGAN
Thru N.C.A.R.B. or Direct	$25.00 Returned in full if registration is denied	$5.00	When notified of approval for temporary or permanent registration	25	Satisfactory to Board	6 years; (each yr. of teaching or study in college of architecture accepted as 1 yr.)	10 years; satisfactory experience as principal	3 6 hr. days	Oral Time not specified	70	MINNESOTA
Direct to Board	$45.00 $20.00 returned if registration denied	$5.00	Only after permanent registration officially granted	21	NONE	NONE	—	2 8 hr. days	NONE Same as Junior Exam.	Not specified	MISSISSIPPI
Thru N.C.A.R.B. or Direct	$15.00 + $10.00 when registration granted	$10.00	When notified of approval for temporary or permanent registration	No age requirement	NONE	3 years; (Graduation from college of architecture accepted as 2 years)	—	3 8 hr. days	NONE Same as Junior Exam.	70	MONTANA
Thru N.C.A.R.B. or Direct	$5.00 + $5.25 for A.I.A. members or $20.25 for all others. All but $5.00 returned if registration denied	$5.00	Only after permanent registration officially granted	21	High school graduate (or equivalent)	3 years; (Graduation from college of architecture accepted in place of experience	5 yrs. satisfactory experience or 2 yrs.' + Graduation from college of architecture	3 8 hr. days 1 7 hr. day	Submission of work only	70	NEW JERSEY
Direct to Board	$25.00 $12.50 returned if registration denied	$5.00	When notified of approval for temporary or permanent registration	No age requirement	NONE	4 years; (4 yrs. study or teaching in college of architecture accepted in place of experience.	10 years; satisfactory experience as principal	3 8 hr. days 1 9 hr. day	1 hour oral + written supplement as directed	75	NEW MEXICO
Thru N.C.A.R.B. or Direct	$25.00 Returned in full if registration denied	$2.00	Only after permanent registration officially granted	25	High-school graduate + 2 yrs. in college of architecture (or equivalent)	5 years; (Graduation from college of architecture accepted in place of 2 yrs. of expr: and 2 days; of the Exam)	10 years; satisfactory experience as principal	1 10 hr. day 3 6 hr. days	Oral Time not specified	75	NEW YORK
Thru N.C.A.R.B. or Direct	$25.00	$5.00	When notified of approval for temporary or permanent registration	21	High school graduate (or equivalent)	NONE	5 years; satisfactory experience as principal	3 8 hr. days	Oral Time not specified	70	NORTH CAROLINA
Thru N.C.A.R.B. or Direct	$10.00 + $15.00 when registration granted	$10.00	Only after permanent registration officially granted	21	High school graduate (or equivalent)	3 years;	10 years; satisfactory experience as principal	3 8 hr. days	1 hour oral + written supplement as directed	75	NORTH DAKOTA
Thru N.C.A.R.B. or Direct (3)	Same as fees in applicant's home state	$3.00	When notified of approval for temporary or permanent registration	21	High school graduate + Math Hist. and Langs as prescribed. (or equivalent)	NONE	10 years; satisfactory experience as principal	1 11 hr. day 1 6½ hr. day 2 7 hr. days	1 hour oral + written supplement as directed	75	OHIO

STATE (1) OR TERRITORY	BOARD	SECRETARY and ADDRESS	REQUIRED for REGISTRATION of NON-RESIDENT ARCHITECTS (6)		
			WITH (7) EXAMINATION CREDITS	WITHOUT (8) EXAMINATION CREDITS	SPECIAL (12) and TEMPORARY
OKLAHOMA	State Board of Examiners of Architects (2)	Leonard H. Bailey Colcord Bldg. Oklahoma City	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination + personal appearance before this board (9) (11)	NONE	To architects doing specialized work only, as employee of one company or corporation, upon proof of permanent employment therefor.
OREGON	State Board of Architect Examiners (2)	Mrs. Margaret O. Fritsch 807 Spalding Building Portland	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination (9) (11)	NONE	NONE
PENNSLVANIA	State Board of Examiners of Architects (2)	M. I. Kast 375 Education Bldg Harrisburg	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination (10)	Evidence that applicant is well versed in essential qualifications + good record of practice and character.	NONE
SOUTH CAROLINA	State Board of Architectural Examiners (2)	J. H. Sams S.C. Nat'l Bank Bldg Columbia	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination (11)	10 years' satisfactory experience as principal + record of high character and integrity	Temporary registration upon receipt of full application and fees and approval by special committee (13)
SOUTH DAKOTA	State Board of Engineering and Architectural Examiners (2)	George C. Hugill Boyce-Greeley Bldg Sioux Falls	Equal preliminary requirements + satisfactory record of practice and character + equivalent examination (9) (11)	Record of outstanding practice and character	NONE
TENNESSEE	State Board of Architectural and Engineering Examiners (2)	Joseph W. Holman 702 Stahlman Bldg Nashville	Registration in state having equal requirements + personal appearance before this board (10)	NONE	NONE
UTAH	Department of Registration and Education	S. W. Golding (Director) 326 State Capitol Salt Lake City	same age requirement + satisfactory record of practice and character + equivalent examination (10)	NONE	NONE
VIRGINIA	State Board for the examination and certification of Professional Engineers, Architects and Land Surveyors (2)	C. G. Massie 4030 Fort Avenue Lynchburg	Equal preliminary requirements + satisfactory record of practice + and character + equivalent examination (9) (11)	NONE	Temporary permits to newly established residents upon filing full application and fees (13)
WASHINGTON	Department of Licenses	Charles R. Maybury (Director) P.O. Box 327 Olympia	Residence in state having equal requirements and reciprocating with Washington	NONE	NONE
WEST VIRGINIA	State Board of Examiners and Registration of Architects	Theodore T. Sansbury 430 Juliana St. Parkersburg	Residence in state having equal requirements and reciprocating with West Virginia	10 years' satisfactory experience as principal when from state having no registration law.	NONE
WISCONSIN	Board of Examiners of Architects and Civil Engineers (2)	Arthur Peabody State Capitol Madison	When applicant's record of practice, character and examination in own state is adjudged satisfactory (11)	NONE	Temporary permits issued to registered architects, if requested upon receipt of full application and fees. Good for 90 days or until Board takes action. (13)
HAWAII	Territorial Board of Registration for Professional Engineers, Architects and Surveyors	William C. Furer 506 Hawaiian Trust Bldg Honolulu	When applicant's record of practice, character and examination in own state is adjudged satisfactory (11)	(a) Graduate approved college of architecture + 2 years' satisfactory experience, or (b) 6 years' experience as principal, with each full year at college of architecture counting as 1 year's experience.	Temporary for 1 year or 1 stipulated commission, upon evidence of general qualifications equal to requirements for permanent registration. Fee $25.00
PHILIPPINE ISLANDS	Board of Examiners of Architects	Cheri Mandelbaum Bureau of Public Works Division of Architecture Manila	NONE (6)	To those who, before approval of amendment Nov. 27, 1924 (a) had preliminary qualifications needed for admission to examination, or (b) had passed P.I. Civil Service examination for architecture.	NONE
PORTO RICO	Board of Examiners of Engineers, Architects and Surveyors	Antonio S. Romero Intendencia Bldg San Juan	NONE (6)	NONE	NONE

NOTES APPLYING TO CHART

"N. C. A. R. B.": National Council of Architectural Registration Boards. An organization of the state boards noted and controlled by them.

"Or equivalent": Any work, practice, study, travel or other experience which the board in question deems a worthy substitute.

"Experience as principal": Experience in full control of an architect's office, with responsible charge of employes and work executed under own name as architect.

1. The following Canadian Provinces have registration laws: Alberta, British Columbia, Manitoba, Maritime Provinces, Ontario, Quebec, Saskatchewan. The following states have registration laws under consideration: Connecticut, Delaware, Kansas, Missouri, Nebraska, Rhode Island, Texas, Vermont, Wyoming.

2. Member N. C. A. R. B.

3. Personal appearance required when made direct to board.

4. All fees, not otherwise indicated, should accompany application. Except as noted, none will be returned. Fees listed are for registration when no additional examination is necessary. Applicants who must take an examination, either in their own or another state, may be required to pay an additional fee therefor or to surrender their right to all or part of fees listed as "returned if registration denied." When application is made through N. C. A. R. B., an additional fee is required—as subsequently outlined.

5. Dates for payment of renewal fees, periods of grace and penalties vary. Due notice is provided by each Secretary. In most states registration *may* be surrendered upon completion of work, after which no renewal fees are required, but all privileges are cancelled. Re-instatement may be had, if requested within specified time limits, upon payment of a fee usually several times larger than one annual renewal. Otherwise, failure to renew on time subjects the registrant to payment of additional amounts and/or revocation of registration.

6. Architects who can not qualify for transfer of registration under provisions noted may do so by presenting proof of preliminary requirements, satisfactory character and practice and by passing full examination before the board in question, as for resident applicants.

HOW APPLICATION MUST BE MADE	APPLICATION FEE (4)	ANNUAL RENEWAL FEE (5)	WHEN APPLICANT MAY START PRACTICE	EXAMINATION of RESIDENT APPLICANTS						STATE (1) OR TERRITORY
				PRELIMINARY REQUIREMENTS FOR ADMISSION (14)				THE EXAMINATIONS (16)		
				JUNIOR CLASS			SENIOR CLASS	(17) JUNIOR	(18) SENIOR	PASSG GR.
				AGE	EDUCATION	EXPERIENCE (15)				
Thru N.C.A.R.B or Direct	$50.00 Returned in full if registration denied	$10.00	Only after special or permanent registration officially granted	21	High School graduate (or equivalent)	NONE	10 years' satisfactory experience as principal	4 10 hr. days	2 hours oral + 4 hours written	75	OKLAHOMA
Thru N.C.A.R.B only	$20.00 Returned in full if registration denied	$5.00	Only after permanent registration officially granted	21	High School graduate (or equivalent)	3 years'	10 years' satisfactory experience as principal	4 7½ hr. days	7 hours oral	70	OREGON
Thru N.C.A.R.B or Direct	$25.00	NONE	Only after permanent registration officially granted	25	High School graduate (or equivalent)	NONE	10 years' satisfactory experience as principal	1-12 hr. day 2-8 hr. days 1-4½ hr. day	1 hour oral	75	PENNSLVANIA
Thru N.C.A.R.B or Direct	$25.00 $10.00 returned if registration denied	$5.00	When notified of approval for temporary or permanent registration	21	High School graduate + Science, Hist., Math. and Langs. as prescribed, (or equivalent)	3 years' (or equivalent) (Graduation from college of architecture accepted as 2 years'	10 years' satisfactory experience as principal	4 8 hr. days	1 hour oral	75	SOUTH CAROLINA
Thru N.C.A.R.B only	$25.00 + $5.00 when registration granted. Returned in full if registration denied	$10.00	Only after permanent registration officially granted	21	High School graduate (or equivalent)	6 years' (or equivalent) (Graduation from college of architecture accepted as 4 years')	Satisfactory record of experience as principal or 2 yrs. expr. + graduation from college of architecture	2 8 hr. days	1 hour oral	70	SOUTH DAKOTA
Thru N.C.A.R.B or Direct	$25.00 $12.50 returned if registration denied	$5.00	Upon receipt of full application and fees (13)	No age requirement	Grammar School graduate	4 years' (each yr. of study at college of architecture accepted as 1 yr)	Obvious ability and over 30 years' of age	4-8 hr. days. Preceeded by general oral Exam.	Oral portion of Junior Exam.	70	TENNESSEE
Direct to Board	$25.00 Returned in full if registration denied	$3.00	Only after permanent registration officially granted	21	NONE	NONE	——	3 7 hr. days	NONE Same as Junior Exam.	75	UTAH
Thru N.C.A.R.B or Direct (3)	$25.00 $5.00 returned if registration denied	$5.00	When notified of approval for temporary or permanent registration	21	NONE	4 years' (or equivalent) (Graduation from college of architecture accepted as 4 years')	——	3 8 hr. days	NONE Same as Junior Exam.	75	VIRGINIA
Direct to Board	$20.00	$5.00	Only after permanent registration officially granted	21	NONE	NONE	——	2 8 hr. days 1 6 hr. day	NONE Same as Junior Exam.	75	WASHINGTON
Direct to Board	$50.00	$10.00	Only after permanent registration officially granted	21	High school graduate + Math., Hist. and Langs. as prescribed (or equivalent)	NONE	——	1 10 hr. day 2 8 hr. days	NONE Same as Junior Exam.	70	WEST VIRGINIA
Thru N.C.A.R.B or Direct (3)	$5.00 + $5.00 when registration granted	$2.50 Payable $5.00 every 2 years	When notified of approval for temporary or permanent registration	21	High school graduate (or equivalent)	5 years' (or equivalent)	10 years' satisfactory experience as principal	4 6 hr. days	1 hour oral + written supplement as directed	60	WISCONSIN
Direct to Board	$25.00 Returned in full if registration denied	$4.00	When notified of approval for temporary or permanent registration	No age requirement	NONE	NONE	——	2 8 hr. days	NONE Same as Junior Exam.	75	HAWAII
Direct to Board	10 pesos	None	Only after permanent registration officially granted	20	NONE	5 years' (Graduation from college of architecture accepted as 5 years').	——	2 7 hr. days	NONE Same as Junior Exam.	70	PHILIPPINE ISLANDS
Direct to Board	$20.00 Returned in full if registration denied	None	Only after permanent registration officially granted	No age requirement	Graduation from college of architecture (or equivalent)	NONE	——	1-10 hr. day supplemented by general Oral Exam.	NONE Same as Junior Exam.	70	PORTO RICO

7. Credit for examinations already passed in any state.

8. Without ever having passed an examination.

9. If examination already passed is not adjudged equivalent, this board considers applicant's experience as principal, subsequent to examination, in light of possible equivalent for making up deficiency.

10. If registration denied upon basis of unequivalent examination or other unsatisfactory evidence of qualifications, registration may be had only by qualifying and passing full examination before this board, as for resident applicants.

11. If registration denied upon basis of unequivalent examination or other unsatisfactory evidence of qualifications, the procedure in this state for making up deficiencies depends upon the individual record. Applicant may be required to: (a) Submit additional evidence, or (b) Appear in person with exhibits for questioning, or (c) Pass examination equal to deficiencies, or (d) Take the full examination or fulfil any or all provisions which are, in the board's opinion, necessary to prove the applicant's qualifications equal to this board's standards.

12. Fees included in this column are for special or temporary registration only and do not apply on permanent registration. If none indicated, the regular fees are required.

13. Subject to later ratification or denial by full board. (Author's note: In case of denial, applicant's registration is automatically terminated with many resulting complications. It is recommended that permanent registration be acquired before starting work.)

14. Educational requirements, in every case, must be completed in schools meeting approval of board in question.

15. Practical experience in offices of reputable architects.

16. Duration and passing grade are used as general guide only in determining equivalents in examination. Examinations of equal hours may vary greatly in severity of the test.

17. The regular written examination for admission to practice.

18. For architects of long years' experience as principals who wish to register in other states, but whose registrations were secured by exemption without subsequent examination, or by unequivalent examinations, or who reside in states without registration laws and have never qualified. All oral examinations are taken in person before the full board in question and include submission of not less than 3 sets of plans, specifications, sketches and photographs of applicant's own work, with verification thereof. The time required, as noted on the chart, is approximate only.

MODERN CRAFTSMANSHIP still relies upon ancient materials for the execution of unusual designs such as this decorative lighting fixture of enameled metal and glass, designed for use in a conservatory. Base, Italian travertine. Standard, black enameled aluminum with copper placques at circular tie connections. Top of base, bronze and silver-gray enameled copper with center of engraved glass. Globe: water, blue enamel; continents, copper with polished brass figures. Carved and polished plate glass at equator. A light in center of the base illuminates the lower half of the globe. The base is lighted from the bottom of the globe and the upper hemisphere is illuminated by light diffused through the glass equator. Diameter of globe, 24¼ inches. Overall height of fixture, 5 feet. Designed and executed by Edward F. Caldwell Co. and shown at the 1933 Exhibition of the Architectural League of New York. Photographs by Samuel H. Gottscho

BALDWIN STUDIO

Master Specifications and How They Can Be Adapted to Small Jobs

BY HENRY A. FRUAUFF, A.I.A., Pfohl & Fruauff, Architects, Buffalo, N. Y.

THE advantages of a master specification cannot be denied and there is certainly no scarcity of material available for its complete assemblage. The contrary is more often true and the very completeness of any well-rounded master specification is one of its weaknesses for use in the varied practice of the average architectural office.

A question is inevitable: How can a detailed, verbose master specification be easily abridged to produce a short, clear and logical document applicable to a small building, the plans of which will be submitted to a selected list of bidders? The answer lies first in the development of a flexible type of master form and second in a simple method of abbreviation that will permit a selection of material to fit the needs of special cases.

For the average office it is advantageous to develop two separate specifications for the more common items which repeatedly occur in building construction. A short form, for small work, can properly be of the "open" type which designates generally the materials to be used and requires, perhaps, that they be "properly installed in a workmanlike manner." The longer form on the other hand must include a more detailed description of materials, together with specific instructions as to methods of installation, or a recital of the ultimate results to be accomplished. The longer document often serves as a convenient checking list for any special situation that must be included in the short form. Together they are of great help in solving the problem of specification flexibility.

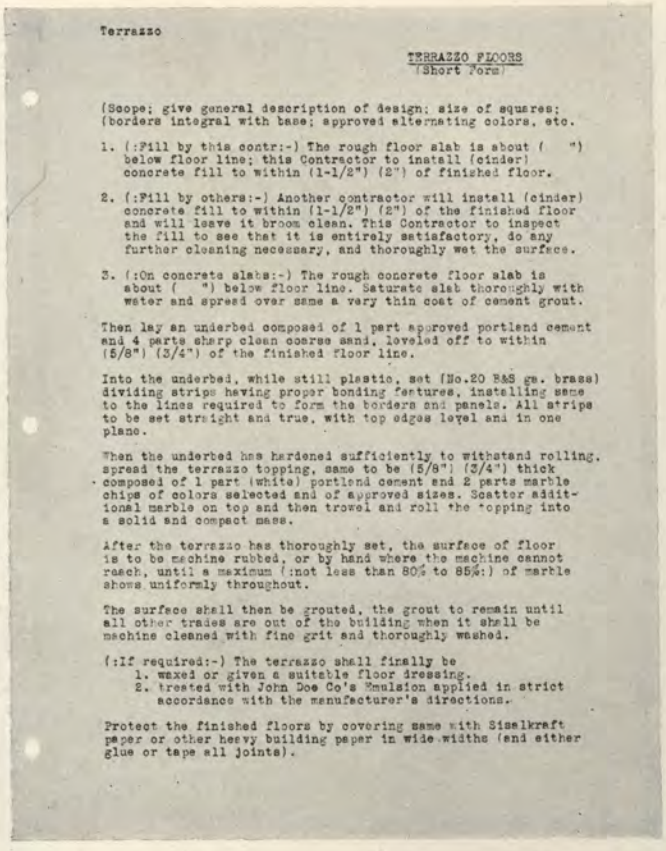
Another aid to flexibility is a series of notes that supplement the master specification and add much to its general value. Some of these notes may be explanatory of items that are contained in the body of the specifications; or they may list alternate materials and methods of construction. Others may be an outline of trade practice. Taken as a whole the notes are a source of information often as valuable as the formal specification itself.

In some of the trades where numerous products and various practices of use pertain—as in *Painting and Finishing*—the notes may often be more relevant than the specification. To be of maximum value, however, they should be phrased so that they are easily incorporated in specification paragraphs when needed, and should be located, of course, close to the heading to which they refer. If the sub-heading of the master form is a short one, the notes may be typed on the bottom of the loose-leaf page. If the heading is long, they are most conveniently located on the page opposite the beginning of the heading. These supplementary notes may be made as complete as the experience of the specification writer will allow. In every case, however, they must be related to the specific subject in view of their reliability and the authority of their sources.

The problem of using a flexible master specification is simplified by developing a method of adapting the long forms into shorter ones that will omit much detail and irrelevant information and yet will suit the particular project under consideration.

The custom of "rehashing" an old specification has been discredited, for almost invariably such practice includes all the errors and shortcomings that the average specification is heir to. Every new specification should be approached as an individual problem. And in connection with a master specification it is highly desirable that a system be developed that is easy and convenient to use.

One solution that has proven entirely satisfactory from all standpoints is what—for want of a better name—I call the "wax paper method" of specification writing. It is used in connection with a master specification that is typewritten on letter-sized, loose-leaf note book paper. Among its advantages is the fact that it will save the specification writer time and avoids the destruction of any portion of the master sheets.



Terrazzo

TERRAZZO FLOORS
(Short Form)

(Scope; give general description of design; size of squares; (borders integral with base; approved alternating colors, etc.

1. (:Fill by this contr:-) The rough floor slab is about (") below floor line; this Contractor to install (cinder) concrete fill to within (1-1/2") (2") of finished floor.

2. (:Fill by others:-) Another contractor will install (cinder) concrete fill to within (1-1/2") (2") of the finished floor and will leave it broom clean. This Contractor to inspect the fill to see that it is entirely satisfactory, do any further cleaning necessary, and thoroughly wet the surface.

3. (:On concrete slabs:-) The rough concrete floor slab is about (") below floor line. Saturate slab thoroughly with water and spread over same a very thin coat of cement grout.

Then lay an underbed composed of 1 part approved portland cement and 4 parts sharp clean coarse sand, leveled off to within (5/8") (3/4") of the finished floor line.

Into the underbed, while still plastic, set (No.20 B&S ga. brass) dividing strips having proper bonding features, installing same to the lines required to form the borders and panels. All strips to be set straight and true, with top edges level and in one plane.

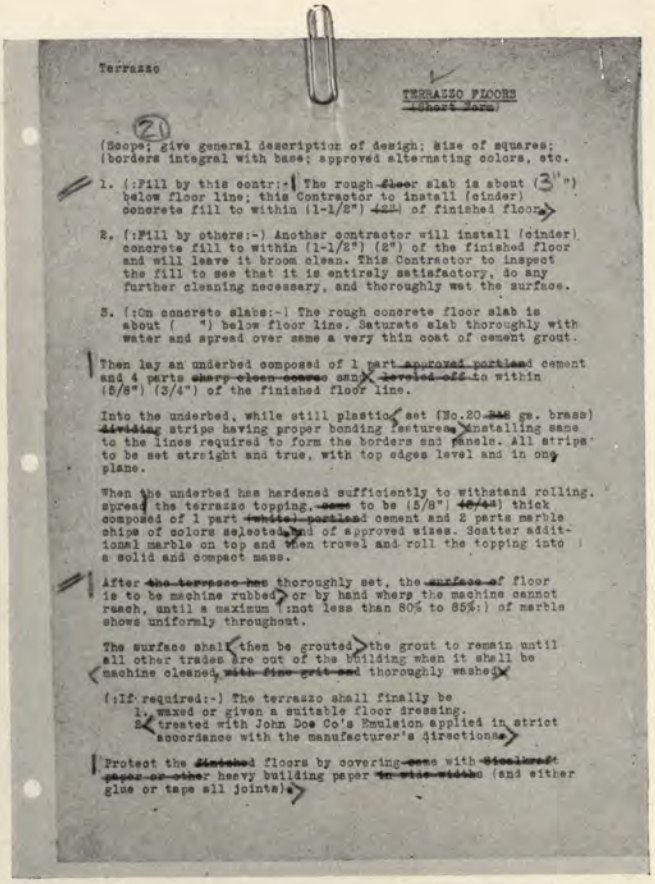
When the underbed has hardened sufficiently to withstand rolling, spread the terrazzo topping, same to be (5/8") (3/4") thick composed of 1 part (white) portland cement and 2 parts marble chips of colors selected and of approved sizes. Scatter additional marble on top and then trowel and roll the topping into a solid and compact mass.

After the terrazzo has thoroughly set, the surface of floor is to be machine rubbed, or by hand where the machine cannot reach, until a maximum (:not less than 80% to 85%:) of marble shows uniformly throughout.

The surface shall then be grouted, the grout to remain until all other trades are out of the building when it shall be machine cleaned with fine grit and thoroughly washed.

(:If required:-) The terrazzo shall finally be
1. waxed or given a suitable floor dressing.
2. treated with John Doe Co's Emulsion applied in strict accordance with the manufacturer's directions.

Protect the finished floors by covering same with Sisalkraft paper or other heavy building paper in wide widths (and either glue or tape all joints).



Terrazzo

TERRAZZO FLOORS
(Short Form)

(Scope; give general description of design; size of squares; (borders integral with base; approved alternating colors, etc.

1. (:Fill by this contr:-) The rough floor slab is about (3") below floor line; this Contractor to install (cinder) concrete fill to within (1-1/2") (2") of finished floor.

2. (:Fill by others:-) Another contractor will install (cinder) concrete fill to within (1-1/2") (2") of the finished floor and will leave it broom clean. This Contractor to inspect the fill to see that it is entirely satisfactory, do any further cleaning necessary, and thoroughly wet the surface.

3. (:On concrete slabs:-) The rough concrete floor slab is about (") below floor line. Saturate slab thoroughly with water and spread over same a very thin coat of cement grout.

Then lay an underbed composed of 1 part approved portland cement and 4 parts sharp clean coarse sand, leveled off to within (5/8") (3/4") of the finished floor line.

Into the underbed, while still plastic, set (No.20 B&S ga. brass) dividing strips having proper bonding features, installing same to the lines required to form the borders and panels. All strips to be set straight and true, with top edges level and in one plane.

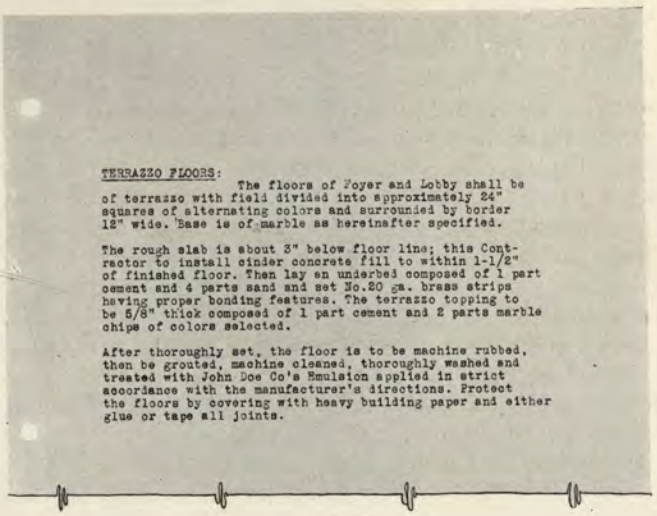
When the underbed has hardened sufficiently to withstand rolling, spread the terrazzo topping, same to be (5/8") (3/4") thick composed of 1 part white portland cement and 2 parts marble chips of colors selected and of approved sizes. Scatter additional marble on top and then trowel and roll the topping into a solid and compact mass.

After the terrazzo has thoroughly set, the surface of floor is to be machine rubbed, or by hand where the machine cannot reach, until a maximum (:not less than 80% to 85%:) of marble shows uniformly throughout.

The surface shall then be grouted, the grout to remain until all other trades are out of the building when it shall be machine cleaned, with fine grit and thoroughly washed.

(:If required:-) The terrazzo shall finally be
1. waxed or given a suitable floor dressing.
2. treated with John Doe Co's Emulsion applied in strict accordance with the manufacturer's directions.

Protect the finished floors by covering same with Sisalkraft paper or other heavy building paper in wide widths (and either glue or tape all joints).



TERRAZZO FLOORS:

The floors of Foyer and Lobby shall be of terrazzo with field divided into approximately 24" squares of alternating colors and surrounded by border 12" wide. Base is of marble as hereinafter specified.

The rough slab is about 3" below floor line; this Contractor to install cinder concrete fill to within 1-1/2" of finished floor. Then lay an underbed composed of 1 part cement and 4 parts sand and set No.20 ga. brass strips having proper bonding features. The terrazzo topping to be 5/8" thick composed of 1 part cement and 2 parts marble chips of colors selected.

After thoroughly set, the floor is to be machine rubbed, then be grouted, machine cleaned, thoroughly washed and treated with John Doe Co's Emulsion applied in strict accordance with the manufacturer's directions. Protect the floors by covering with heavy building paper and either glue or tape all joints.

WAX PAPER, BLACK CRAYON PENCIL and PAPER CLIPS are the only tools needed to condense a master specification by the "wax paper method." Place a sheet of wax paper over the master page; to maintain alignment, fold wax paper down about 1 inch at top and secure with a paper clip. Allow clip to project 1/4 inch to assist copyist in locating page. Delete and change master specification as desired on the wax paper, using the following symbols: // start paragraph; | start sentence; X and; < start; > stop

Above, left, typical loose-leaf master specification page. Above, right, wax paper cover sheet upon which revisions are indicated by key symbols. At the right is the resulting completed short specification

Briefly the method is this: Thin waxed paper—the kind that comes in sheets 12″ x 14″ and is used for various purposes in the kitchen—is cut down to approximately 8″ x 12″. A sheet of it is placed over a page of the master specification with the upper edge projecting about 1″ above the page. The edge is folded over and secured by a wire paper clip, which should project about 1/4″ to form a sort of tab. The typewritten matter is easily seen through the wax paper and the condensed specification may be indicated with an ordinary black crayon pencil by bracketing all subject matter to be retained and deleting the words or clauses that do not pertain to the subject at hand.

Descriptive insertions are made by the familiar numbering system and are written on a scratch pad from which they are typed into their proper places when the first draft of the specification is made. As a further aid in condensing the long specification form a simple, brief set of symbols is used to indicate changes, deletions, and the beginning and end of sentences and paragraphs. As subsequent pages are completed, the projecting paper clips serve as tab guides to the stenographer.

A specification written in this manner can, by the judicious use of the black pencil (which may be easily erased from the wax paper by a kneaded rubber eraser), be made as long or as concise as desired. Furthermore, it will read surprisingly well in either form if the master copy has been worded with this in mind. When used in such a way the master specification is an efficient instrument for reducing errors of omission to a minimum. It acts as a check list and serves also as a valuable clearing house for data from all sources, for it can be amended at any time in view of changing conditions or accumulation of experience.

The advantages of the master specification are undoubtedly legion, but no matter how well conceived or comprehensive, it cannot be considered as automatic. The specification can never become a substitute for experience and judgment, and its greatest value lies in the flexibility of its form.

La Charité-Sur-Loire

By SAMUEL CHAMBERLAIN

Sketches by the Author

Hotel of the Black Goose, at the left, whose architecture is almost as exotic as its food. At right, the abbey church and fanciful old houses of La Charité

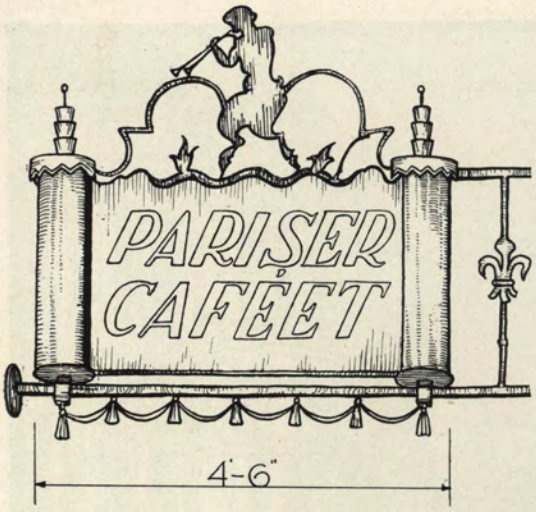
THE Loire is the longest river in France, but its banks are familiar to the traveling public only along that narrow stretch known as the "château country." Amboise and Chaumont and Blois are all fascinating places, but they tell only a fragment of the travelogue. A slight push farther up the river banks would be richly rewarded. The first eye-opener is the idyllic Beaugency, bristling with towers and prisons and town gates. Then come the rolling vineyards of Orlèans whose grapes, alas, make better vinegar than wine. Then the glorious old feudal town of Gien, whose ancient château d'Anne de Bretagne is built up with the most astonishing decorative brick patterns in France. Beyond the classic vineyards of Pouilly—those rippling rows of yellow grapes whose nectar can make a symphony out of a dozen oysters—lies the suave, steep-roofed citadel of La Charité-sur-Loire.

Here is a spot which comes as close to being the picture book village of your childhood as anything in France. The town hides behind the river embankment, cringing from the winds which gallop down the valley. It is close-packed and dimly lit, and it fairly bulges with atmosphere. Its roofs are grotesquely steep, covered with patched, moss-covered tile. Its chimneys are plump and enormously high. Its shops are miniature dug-outs hewn in the vast mediaeval masonry of another age. For La Charité, ancient as Gaul itself, once boasted a fortified abbey as famous as Cluny or Jumièges, and almost as impressive. The present Romanesque church gives but an inkling of its former splendor. Around the nucleus of the abbey walls the present town has been built. Many a habitation has hatched in an abandoned chapel or the bay of a deserted church nave. Everywhere are unexpected archways and flights of stone steps and bits of bizarre fenestration. One can only conjecture at what lies behind some of the irregular rows of old houses, whose façades are marked with provocative bits of detail, a block-up cloister here, a cob-webbed rose window there, a pure Gothic doorway farther on. And only the town historian appreciates the magnitude of the labyrinth of vaulted cellars and prisons and refectories which run everywhere underground.

Twentieth century progress does not greatly disturb the old town. The Iron Horse could get no closer than a neighboring hillside, and it is quite an uphill jaunt to the railway station. Automobilists find that many of the streets are intended for donkey carts only. There is not a suspicion of a factory chimney. It is not surprising that La Charité has become a retreat for many a retired man of letters, many a peace-loving artist. You will see them playing backgammon at aperatif time in the red plush cafe which adjoins the little town hotel. A more genial group of bearded elders would be hard to find. La Charité has provided them with a perfect setting for their declining years. Follow them into the old beamed *salle à manger* of the hotel, where a plump barmaid serves everyone at a huge central table. She brings in a steaming *soupe au choux,* followed by a bubbling platter of *Truite Meunière.* She uncorks several bottles of crystal clear Pouilly. Back she comes with a rich dish of *Boeuf Bourguignan* and some deep red carafes of Beaujolais. Then a simple salad of escarole, a handsome slab of Brie, an ample bowl of fruit and some mightily strong black coffee.

An atmosphere of animated well-being pervades the room. What else could be expected? And you or I, the passing guest, feels a surge of mixed emotions. Above the exhilaration of a gastronomic epic, above the haunting, steep-roofed profile of the ancient town, is the sudden realization that the art of growing old gracefully is so simple that it almost is within one's grasp. A "joie de vivre" becomes abruptly attainable, despite a lurking temptation to make forlorn comparisons with the speakeasy and the corner drug store back home. It seems an excellent moment to join the be-whiskered veterans in ribald song.

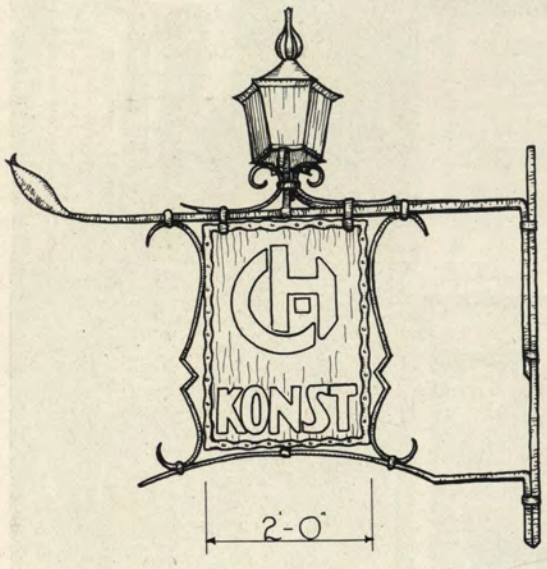
MERCERIE
BONNETERIE



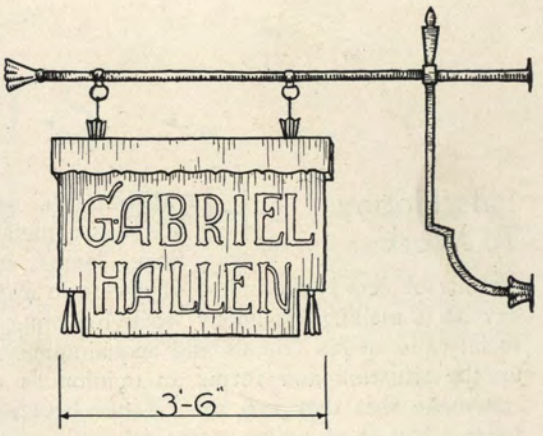
An unusual sign with its lighting cleverly concealed and reflected from two round end motives. The material is painted sheet metal, except supports, which are wrought iron. The lettering is painted

Hanging Signs

These signs show part of the results obtained by a self-constituted committee of control composed of a group of citizens who by force of public opinion sought to improve the design of the signs in Stockholm



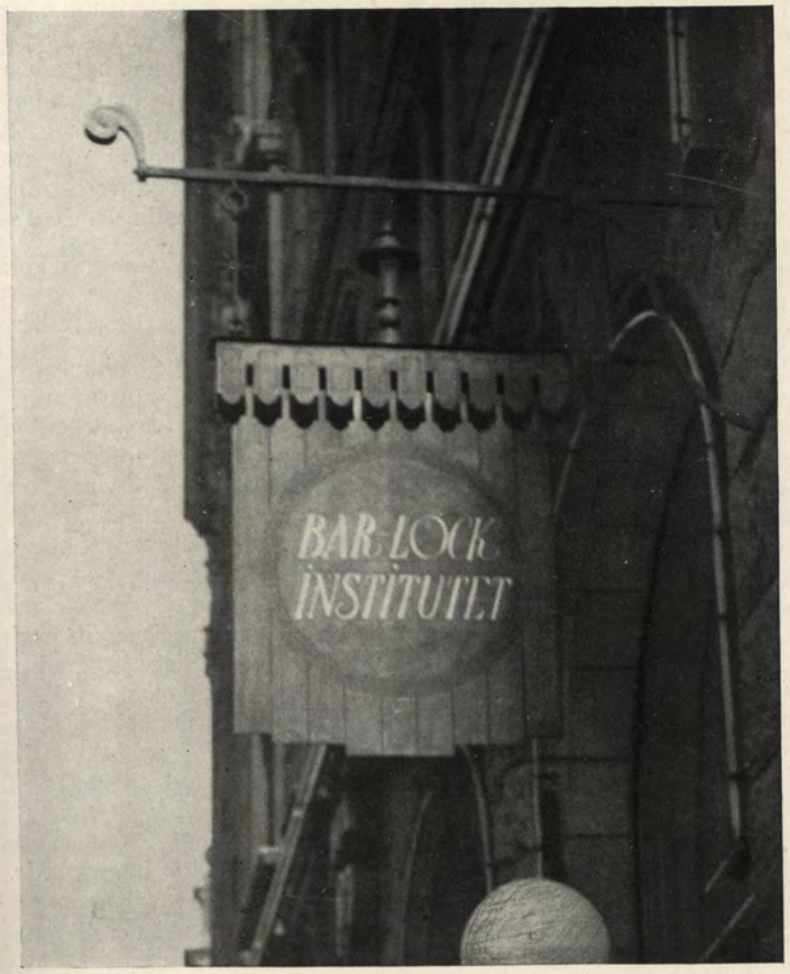
A combination sign and lantern. The sign board is of wood supported in a wrought iron frame. Letters are painted in white and illuminated from the bottom of lantern overhead. All the iron work is painted black

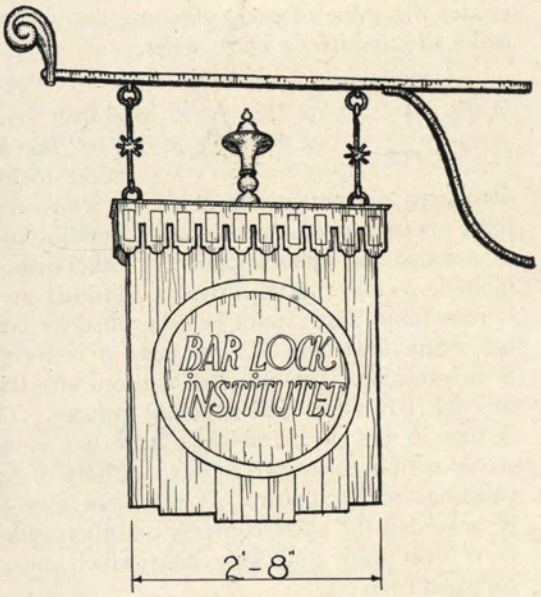


A simple design with gold embossed letters, illuminated by lights concealed behind metal canopy at the top. The material is sheet metal except the supporting members, which are wrought iron with gilded finials

In Stockholm

PHOTOGRAPHED BY
WILLIAM DEWEY FOSTER





A painted sheet metal sign with gilded, embossed letters. The supporting members are wrought iron painted black except the end of top bar which is gilded. Lighting is concealed behind the metal valance

. . As It Looks

Puts Hobby To Work

HAMMERING copper, brass and other metals into ash trays, lamps, name plates and art objects is the hobby of a certain architect. Today he is making his hobby work for him. He makes social calls on his friends and acquaintances. He sizes up the situation and forms an opinion as to what he can make that they can use. Later he writes them a letter about it or makes a second call prepared with a definite suggestion, often reinforced by a sketch. He is developing a good business. He has an idea and is not afraid to make use of it.

Citizen Participation

CITIZENS of the United States are at last becoming conscious of their responsibility in interesting themselves in good government. Buffalo, New York, has a City Planning Association. It is a non-partisan, unofficial organization. It is composed of men, some of them architects, who are willing to give their time to study programs and urge their findings upon the City Council in an effort to build up an orderly city in which due regard is given to health, economy, convenience and beauty. The president of the Association states that people are becoming "planning conscious." Because it demonstrates the value of good planning this movement should make the architect's path easier.

A Fault to Correct

AN architect suggests that steps be taken to secure legislation making it mandatory to give an architect credit whenever the drawings, photographs or models of a building are illustrated in a magazine or newspaper or otherwise publicly exhibited. While the objective is admitted as desirable, it is something that cannot be controlled by law. We have too many laws and among them a copyright law that is enforceable. The end can be more effectively attained through education and personal contact. The difficulty is that in the past architects have not identified themselves with architecture as have authors of books, music, paintings and sculpture. If they had they would today be accorded the same courtesy as other authors. Isn't it their own fault and something which once understood *they* can correct?

A Productive Talent

AN architectural draftsman spent about two weeks looking for a job. This convinced him that jobs were not to be had in his field. He has one other talent—the ability to play by ear on the piano. He capitalized his ability by getting a job composing special music for a weekly radio program. He composes on the piano, by ear; an assistant transcribes his composition into a written score for the orchestra. His employer pays him $75 a week!

Do Buildings Last Too Long?

THE idea that buildings can be built to last too long has extended to England for J. R. Leatheart, F. R. I. B. A. recently made the statement that buildings like machinery have a limited term of usefulness and should be replaced by improvement or scientific discovery. "They should be designed," according to Mr. Leathart, "in such a simple way as to make erection and demolition a simple and cheap procedure; modern requirements in industry or commerce no longer call for architectural monuments, but for economical buildings of a purely utilitarian character. The sooner this fact is grasped, the sooner we shall be on the road to revival."

There may be something in what Mr. Leathart says, but in general the difficulty lies in the ability to "write off" the building investment except where increased land values makes another building mandatory to show a profitable investment.

All About Renting

SOME months ago a well-known national magazine published an article for laymen on what to look for when renting a house. The article was written by an architect. A short time after the publication of the story the author found it necessary to go house hunting. After much looking about he found a suitable place for rent. Upon moving into the house he found that most of his furniture could not be taken into the new house without being taken apart. If memory serves, no mention of a renter investigating this question was in the story! Otherwise the article was probably all right. Writing from personal experience is a safe thing to do.

Successor to Mr. Heath

IN VIEW of the Administration's ambitious program of public works, architects in all sections of the country will be interested to learn that L. W. Robert, a consulting engineer and architect of Atlanta, Ga., has recently been appointed to the important post of Assistant Secretary of the Treasury. As a successor to Ferry K. Heath, Mr. Robert will have charge of the office of the Supervising Architect, and will bring to his new duties a long experience in engineering, construction and architecture. Since his graduation from the Georgia School of Technology in 1908, Mr. Robert has worked continuously in the field of planning and building. He was formerly a member of the firm of Dallis-Robert Co., architects and engineers of Atlanta and in 1917 organized the firm of Robert & Co., industrial architects and mill engineers. The entire architectural profession will watch with interest Mr. Robert's conduct of his new office and will be particularly interested to learn his attitude toward the Government's employment of architects in private practice.

to the Editors . .

For Fishermen Only

MANY architects like to fish. Some go for the fish and others just for the fishing. In any event they should be interested in a recent news report especially in connection with the bait question. It is stated that a man in Georgia has found that by driving a stake in the ground and vibrating it violently a miniature earthquake results which causes the worms to seek the surface. This seems to be a variation of the electric worm digger. It also requires more energy than pouring mustard water into wormholes found in lawns. Another man has found that he can collect worms when they are plentiful, put them in cold storage and revive them for use when the supply is scarce. His experiments have been confined to catalpa worms. It would be interesting to know whether or not the humble angle worm would respond to the same treatment. Another man claims that he can tell when it is worth while going fishing by feeding the gold fish in an outdoor pool. If they go after the food with a vengeance, he goes fishing. Otherwise he goes downtown and attends to business.

Good Publicity Angle

BIRTHDAYS of such architects as Sir Christopher Wren, Inigo Jones, Benjamin Latrobe, William Thornton, Thomas Jefferson, H. H. Richardson and others might well be found a good excuse to secure newspaper publicity for the architectural profession in many localities. Well-written articles prepared well in advance of the required date, accompanied if possible by an illustration suitable for newspaper reproduction, would probably be accorded favorable consideration by many newspapers. This would be especially true where a local incident or building were discussed. It might be possible so to prepare the story that it would become a medium for making the public more cognizant of good architecture.

A New Idea in Modernization

A PLAN for the continuous modernization of buildings that would enable architects to assume the role of modernizing consultants was recently broached before the Architectural League of New York by J. C. Knapp, Vice President of the Otis Elevator Co. Scoring the present system of building amortization as wasteful and unsound, Mr. Knapp advocated the employment of part of the amortization reserve for the renewal of the parts of a building commonly subject to deterioration. To supervise this expenditure and to conduct a periodic survey of the building's condition an architect would be retained by the building owner on the basis of a fixed yearly fee. The suggestion contains many possibilities. In a well built structure, about 40 per cent of its value—the various services, equipment and accessories—is subject to technical and often practical, obsolescence, while the remainder will usually far outlast the period covered by the financial plan. Here may lie many opportunities for architects to widen their scope of activity and render a real service to their community through maintaining property values by economically planned improvements.

An Exclusive Lunch Club

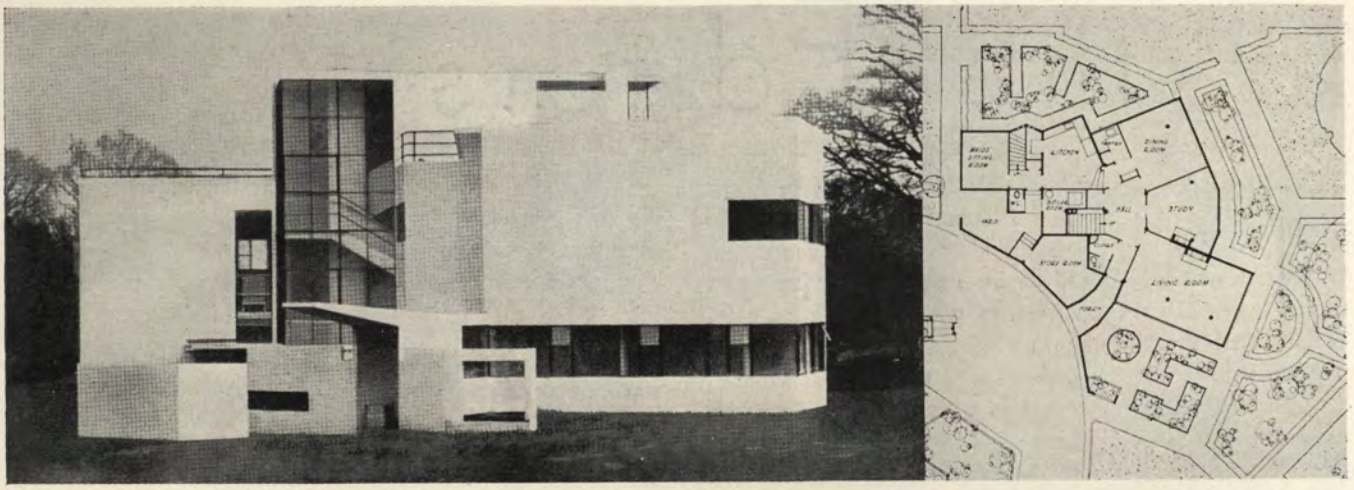
TWO or three architects who share the same office have organized an informal but exclusive luncheon club. As an economy measure they bring their own lunch to the office from home. A few of their friends have been told about it and invited to drop in whenever they care to. They are warned to stop at the nearest restaurant and buy a sandwich and cup of coffee for themselves and bring their lunch to the office and enjoy good company. Not a bad idea!

Good Construction Is Essential

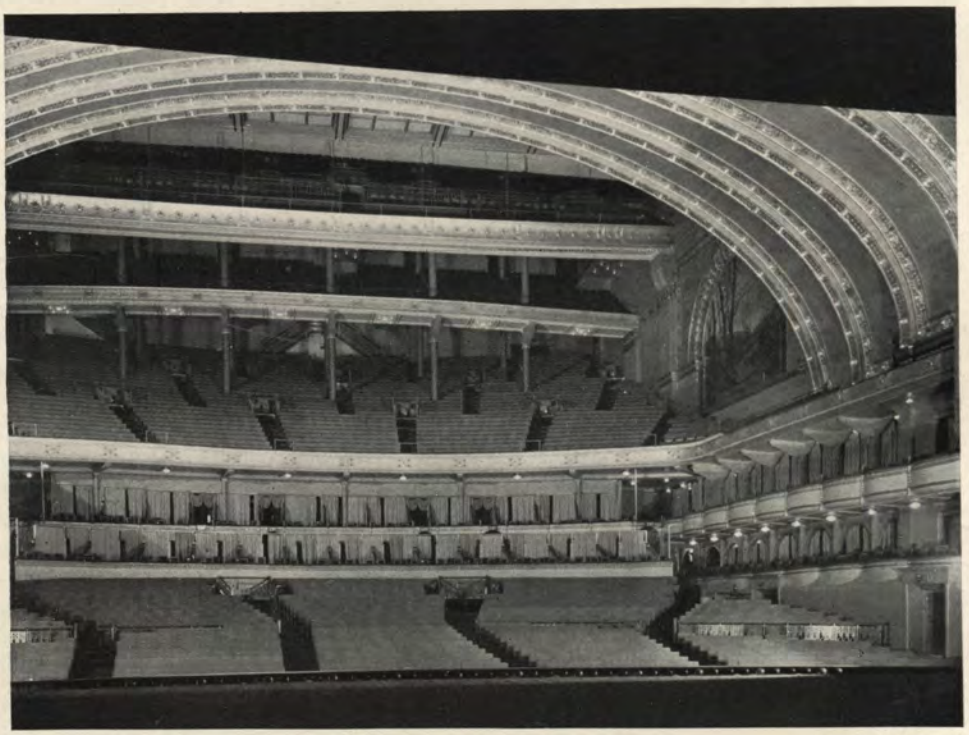
DAMAGE caused to buildings of all types by the recent earthquake in California points to the vital necessity of good construction generally and to the need for special precautions in the structural design of buildings within zones that are subject to periodic earthquakes or tornadoes. Such disturbances produce stresses within a building structure that are not ordinarily encountered. Experience has shown that they can be resisted, however, and safety in building demands that they be provided for. But this can only be actually accomplished by the rigid observance of building codes, the use of proper materials and care in the supervision of construction. Even an earthquake may serve a useful purpose if it focuses the public's attention upon the necessity for well-designed, properly constructed buildings. There is no substitute for good construction.

Once a Year

MEMORIAL DAY is an appropriate occasion upon which to honor the memory of distinguished architects who have passed to the great beyond. Several years ago the Washington, D. C. Chapter of the American Institute of Architects inaugurated the practice of placing a token of remembrance on the graves of noted architects buried in the vicinity of Washington. Last year the Philadelphia Chapter appointed a committee to visit the graves of local members of the profession and place upon them a floral token as an indication of the respect and esteem in which their memory is held. Architects are often as well known for the service they have rendered in elevating professional practice as for the buildings they have designed. It is fitting that recognition of leaders in the profession and the contributions they have made toward the progress of architecture should be perpetuated. Architectural organizations everywhere might well pause once a year to give thought to the memory of those who have labored and served well that the profession of architecture might rise to new heights of service to mankind.



With reinforced concrete, light steel, standard metal casements and glass an architect can do almost anything. The house above, designed by Connell and Ward, architects, was recently completed at Grayswood, England. The rooms have been grouped to take advantage of exterior views, and to economize hall space within. Most of the exterior walls are not structural, but are carried upon columns and cantilevered beams. From The Architectural Review



In the gay old days of hansom cabs, handle-bar whiskers and bicycles-built-for-two the Chicago Auditorium was the Mecca of Chicago's music lovers. Planned by Dankmar Adler and Louis Sullivan in 1889, this grand old middle-western landmark has recently been renovated and reopened after three years of neglect. At the right is a view of the auditorium that has been called the finest, acoustically, in the world

HEDRICK-BLESSING

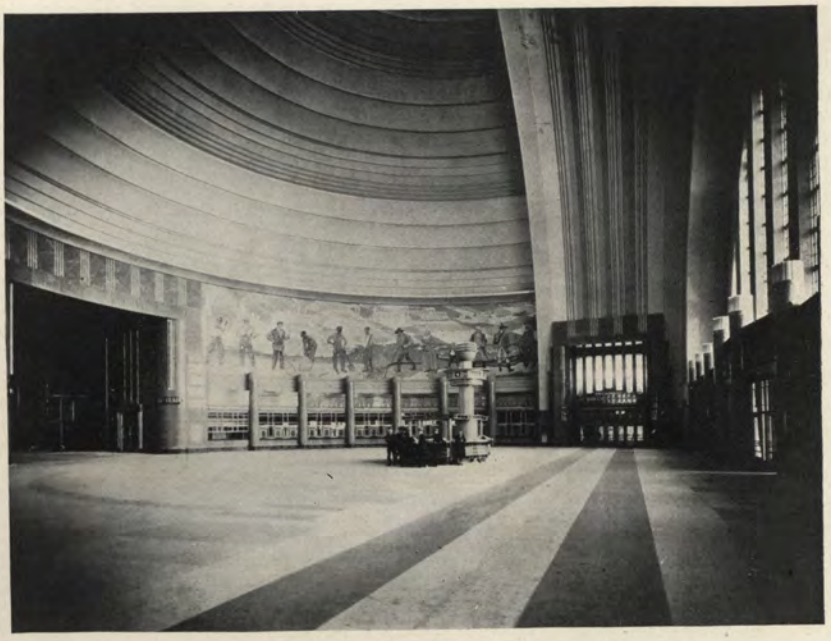
Trends & Topics

• The Chicago Auditorium, acclaimed by Frederick Stock, Director of the Chicago Symphony Orchestra, as the finest hall, acoustically, in the world, has recently been refurbished, equipped with the most modern stage lighting and reopened to Chicago music-lovers after three seasons of darkness. During the construction of the Chicago Civic Opera House, the old Auditorium, first opened in 1889, was rumored to be unsafe structurally. A minute examination by experts proved this false. Their survey showed that although the building had settled noticably due to the weight of the extra stories which were added without changing the original foundations, it is, and always has been, safe. The old structure, which includes an office building and a hotel, was built before caissons were used in Chicago for building foundations. The ten-story Chicago Auditorium rests upon a grillage of heavy timbers located below the water line as a floating foundation on the clay. The walls are of masonry, faced with limestone and granite.

• The idea of remodeling campaigns as an aid to general business by putting men to work grows apace. The National Capital is the latest city to announce a program for home repair and remodeling backed by a $500,000 credit pool and a well coordinated publicity campaign. The value of such movements is consider-

SIGURD FISCHER

In Stockholm, Sweden, a door handle is not always just another mechanical gadget. This figure, cast in gleaming bronze, serves as the door pull at the main entrance ot Stockholm's new Public Library for which Gunnar Asplund was architect



Every convenience, including a movie theatre, has been incorporated in the new Cincinnati Union Terminal which has been called the most modern railroad project in the world. The main concourse, above, has a clear span of almost 120 feet. The terminal serves seven railroads and accommodates 17,000 passengers. Fellheimer and Wagner were the architects

In Leipzig, Germany, unemployed men are building homes for themselves under the supervision of architects. Each dwelling houses two families and costs about $1,250. The city furnishes one-quarter acre of land per family and also supplies the money for materials. At the right are houses which families will eventually pay for at the rate of $3.70 per month

Of the Times

able. In 1932, 144 cities reported various types of organized work campaigns, and 81 showed expenditures for labor and materials of about 70 million dollars.

• Public works architects take notice! Plans of new post offices will be vitally affected by an executive order recently issued by the new Administration's Fourth Assistant Postmaster General, Silliman Evans. Pen points in all post offices must be changed daily! This means about 4,557,600 new pens per year, not to speak of the ink. Pens come in boxes and boxes take up space . . . a new shelf must be added to the supply closet. And there you are!

• A carved frieze 8½ feet high and 565 feet long is a big frieze, though it may not be the ultimate record for a public building. It will be carved in marble under the direction of Albert Stewart, New York sculptor, across the entire length and two sides of the new Post Office at Albany, N. Y. Gander, Gander & Gander were the architects, N. R. Sturgis, associate architect, and Electus D. Litchfield, consulting architect.

• Researches at Ohio State University have shown that when awnings are used on the sunny sides of a building, the cooling requirements for air conditioning the interior may be reduced (*Continued on page* 110)

FORMS

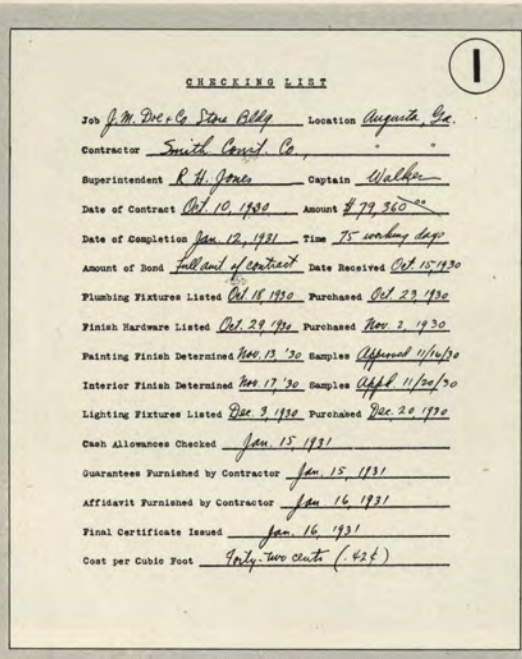
1—Checking list

2—Memorandum

3—Commission account

4—Time records

5—Construction reports



1

CHECKING LIST

Job J. M. Doe + Co Store Bldg Location Augusta, Ga.

Contractor Smith Const. Co. " "

Superintendent R. H. Jones Captain Walker

Date of Contract Oct. 10, 1930 Amount $79,360.00

Date of Completion Jan. 12, 1931 Time 75 working days

Amount of Bond Full amt of contract Date Received Oct. 15, 1930

Plumbing Fixtures Listed Oct. 18, 1930 Purchased Oct. 23, 1930

Finish Hardware Listed Oct. 29, 1930 Purchased Nov. 2, 1930

Painting Finish Determined Nov. 13, '30 Samples Approved 11/16/30

Interior Finish Determined Nov. 17, '30 Samples Appd. 11/20/30

Lighting Fixtures Listed Dec. 3, 1930 Purchased Dec. 20, 1930

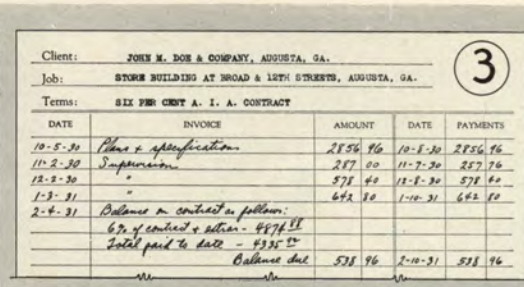
Cash Allowances Checked Jan. 15, 1931

Guarantees Furnished by Contractor Jan. 15, 1931

Affidavit Furnished by Contractor Jan. 16, 1931

Final Certificate Issued Jan. 16, 1931

Cost per Cubic Foot Forty-two cents (.42¢)



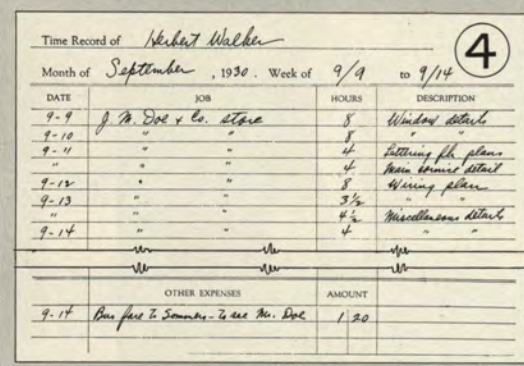
3

Client: JOHN M. DOE & COMPANY, AUGUSTA, GA.

Job: STORE BUILDING AT BROAD & 12TH STREETS, AUGUSTA, GA.

Terms: SIX PER CENT A. I. A. CONTRACT

DATE	INVOICE	AMOUNT	DATE	PAYMENTS
10-5-30	Plans + specifications	2856 96	10-8-30	2856 96
11-2-30	Supervision	287 00	11-7-30	257 76
12-2-30	"	578 40	12-8-30	578 40
1-3-31	"	642 80	1-10-31	642 80
2-4-31	Balance on contract as follows:			
	6% of contract + extras - 4874.88			
	Total paid to date - 4335.92			
	Balance due	538 96	2-10-31	538 96



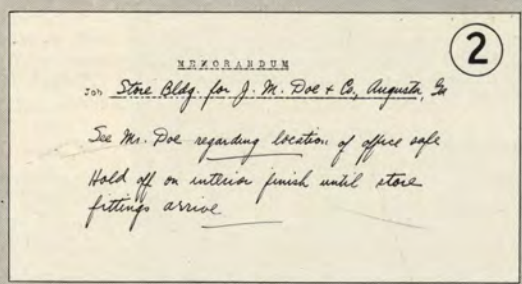
4

Time Record of Herbert Walker

Month of September, 1930. Week of 9/9 to 9/14

DATE	JOB	HOURS	DESCRIPTION
9-9	J. M. Doe + Co. store	8	Window details
9-10	" "	8	" "
9-11	" "	4	Lettering fl. plans
"	" "	4	Main cornice detail
9-12	" "	8	Wiring plan
9-13	" "	3½	" "
"	" "	4½	Miscellaneous details
9-14	" "	4	" "

	OTHER EXPENSES	AMOUNT
9-14	Bus fare to Sommers - to see Mr. Doe	1 20



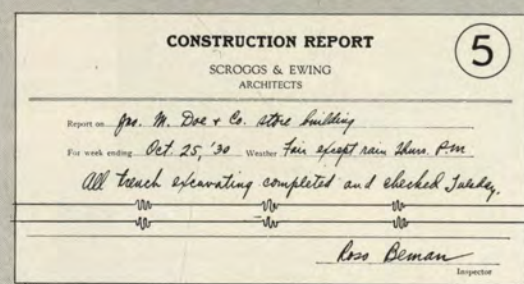
2

MEMORANDUM

Job Store Bldg. for J. M. Doe + Co., Augusta, Ga

See Mr. Doe regarding location of office safe

Hold off on interior finish until store fittings arrive



5

CONSTRUCTION REPORT

SCROGGS & EWING
ARCHITECTS

Report on Jno. M. Doe + Co. store building

For week ending Oct. 25, '30 Weather Fair except rain thurs. P.M.

All trench excavating completed and checked Tuesday.

Ross Beman
Inspector

Accurate Job Accounting Made Easy

BY PHILANDER P. SCROGGS, A.I.A.

Scroggs and Ewing, Architects, Augusta, Georgia

EVERY architect, be his practice large or small, is interested in keeping an accurate record of each job in the simplest possible manner. The system used by my firm for a number of years has proved both simple and accurate. It has been a joy, too, because it relieves the mind of many details.

This system centers around the "Job Book." This is simply a ring book cover in which all the records pertaining to a job are kept in loose leaf form. Each job has its own job book, properly indexed and labeled. When a job is finished, all the records are transferred from the book to the permanent file. The same ring cover is then available for the next project.

The forms used for records are not entirely original, some having been borrowed from others. In the job book the following records are kept, in the order named:

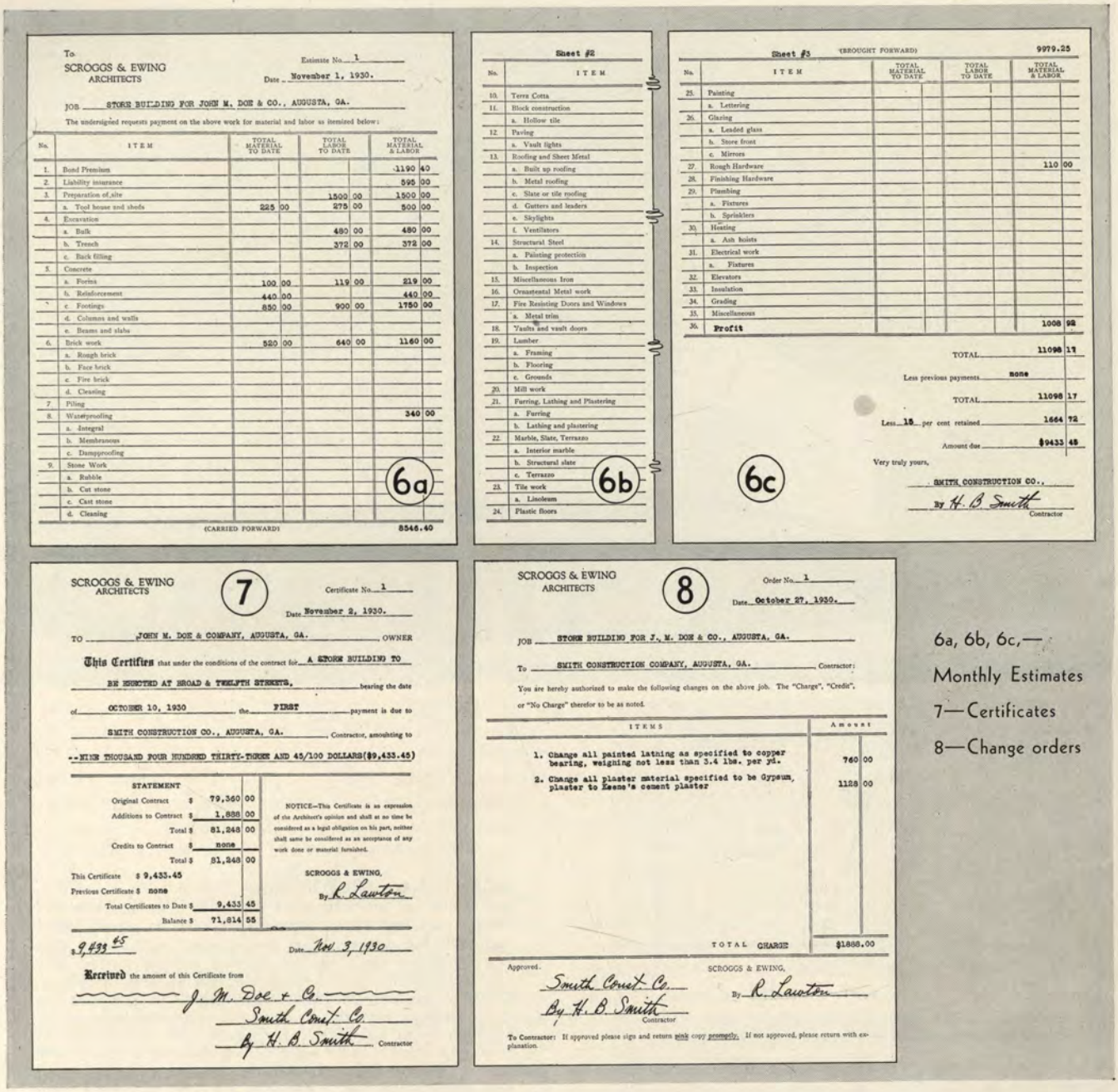
CHECKING LIST. This form, shown in Figure 1, serves as an index to the job, and is a reminder of things which the architect must do. It is also a record for future reference of the salient facts concerning the job.

MEMORANDUM. One or more blank sheets of paper will serve the purpose of the form, which is shown in Figure 2. Items to be remembered which are not "regular" are jotted down on this paper as memoranda.

COMMISSION ACCOUNT. Owing to the nature of an architect's work, this form, Figure 3, has been found more suitable than an ordinary ledger. Being loose leaf, the account may be extended indefinitely.

TIME RECORDS. Weekly time records, Figure 4, are filled in by the draftsmen and turned over to the bookkeeper, who estimates the cost of the time and then files the records in the proper job book. In the absence of a bookkeeper this work could easily be performed by the stenographer.

CONSTRUCTION REPORTS. Each week the job inspector or clerk of the works submits a report on the form



To
SCROGGS & EWING
ARCHITECTS

Estimate No. 1
Date November 1, 1930.

JOB STORE BUILDING FOR JOHN M. DOE & CO., AUGUSTA, GA.

The undersigned requests payment on the above work for material and labor as itemized below:

No.	ITEM	TOTAL MATERIAL TO DATE	TOTAL LABOR TO DATE	TOTAL MATERIAL & LABOR
1.	Bond Premium			1190 40
2.	Liability insurance			595 00
3.	Preparation of site		1500 00	1500 00
	a. Tool house and sheds	225 00	275 00	500 00
4.	Excavation			
	a. Bulk		480 00	480 00
	b. Trench		372 00	372 00
	c. Back filling			
5.	Concrete			
	a. Forms	100 00	119 00	219 00
	b. Reinforcement	440 00		440 00
	c. Footings	850 00	900 00	1750 00
	d. Columns and walls			
	e. Beams and slabs			
6.	Brick work	520 00	640 00	1160 00
	a. Rough brick			
	b. Face brick			
	c. Fire brick			
	d. Cleaning			
7	Piling			
8.	Waterproofing			340 00
	a. Integral			
	b. Membranous			
	c. Dampproofing			
9.	Stone Work			
	a. Rubble			
	b. Cut stone			
	c. Cast stone			
	d. Cleaning			
	(CARRIED FORWARD)			8546.40

6a

Sheet #2

No.	ITEM
10.	Terra Cotta
11.	Block construction
	a. Hollow tile
12.	Paving
	a. Vault lights
13.	Roofing and Sheet Metal
	a. Built up roofing
	b. Metal roofing
	c. Slate or tile roofing
	d. Gutters and leaders
	e. Skylights
	f. Ventilators
14.	Structural Steel
	a. Painting protection
	b. Inspection
15.	Miscellaneous Iron
16.	Ornamental Metal work
17.	Fire Resisting Doors and Windows
	a. Metal trim
18.	Vaults and vault doors
19.	Lumber
	a. Framing
	b. Flooring
	c. Grounds
20.	Mill work
21.	Furring, Lathing and Plastering
	a. Furring
	b. Lathing and plastering
22.	Marble, Slate, Terrazzo
	a. Interior marble
	b. Structural slate
	c. Terrazzo
23.	Tile work
	a. Linoleum
24.	Plastic floors

6b

Sheet #3 (BROUGHT FORWARD) 9979.25

No.	ITEM	TOTAL MATERIAL TO DATE	TOTAL LABOR TO DATE	TOTAL MATERIAL & LABOR
25.	Painting			
	a. Lettering			
26.	Glazing			
	a. Leaded glass			
	b. Store front			
	c. Mirrors			
27.	Rough Hardware			110 00
28.	Finishing Hardware			
29.	Plumbing			
	a. Fixtures			
	b. Sprinklers			
30.	Heating			
	a. Ash hoists			
31.	Electrical work			
	a. Fixtures			
32.	Elevators			
33.	Insulation			
34.	Grading			
35.	Miscellaneous			
36.	**Profit**			1008 92

TOTAL 11098 17
Less previous payments none
TOTAL 11098 17
Less 15 per cent retained 1664 72
Amount due $9433 45

Very truly yours,
SMITH CONSTRUCTION CO.,
By H. B. Smith
Contractor

6c

SCROGGS & EWING
ARCHITECTS

7

Certificate No. 1
Date November 2, 1930.

TO JOHN M. DOE & COMPANY, AUGUSTA, GA. OWNER

This Certifies that under the conditions of the contract for A STORE BUILDING TO BE ERECTED AT BROAD & TWELFTH STREETS, bearing the date of OCTOBER 10, 1930 the FIRST payment is due to SMITH CONSTRUCTION CO., AUGUSTA, GA. Contractor, amounting to --NINE THOUSAND FOUR HUNDRED THIRTY-THREE AND 45/100 DOLLARS ($9,433.45)

STATEMENT

Original Contract	$ 79,360	00
Additions to Contract	$ 1,888	00
Total	$ 81,248	00
Credits to Contract	$ none	
Total	$ 81,248	00
This Certificate	$ 9,433.45	
Previous Certificate	$ none	
Total Certificates to Date	$ 9,433	45
Balance	$ 71,814	55

NOTICE—This Certificate is an expression of the Architect's opinion and shall at no time be considered as a legal obligation on his part, neither shall same be considered as an acceptance of any work done or material furnished.

SCROGGS & EWING,
By R. Lawton

$9,433 45
Date Nov. 3, 1930

Received the amount of this Certificate from
J. M. Doe & Co.
South Const. Co.
By H. B. Smith Contractor

SCROGGS & EWING
ARCHITECTS

8

Order No. 1
Date October 27, 1930.

JOB STORE BUILDING FOR J. M. DOE & CO., AUGUSTA, GA.

To SMITH CONSTRUCTION COMPANY, AUGUSTA, GA. Contractor:

You are hereby authorized to make the following changes on the above job. The "Charge", "Credit", or "No Charge" therefor to be as noted.

ITEMS	Amount
1. Change all painted lathing as specified to copper bearing, weighing not less than 3.4 lbs. per yd.	760 00
2. Change all plaster material specified to be Gypsum, plaster to Keene's cement plaster	1128 00
TOTAL CHARGE	$1888.00

Approved.
South Const. Co.
By H. B. Smith
Contractor

SCROGGS & EWING,
By R. Lawton

To Contractor: If approved please sign and return pink copy promptly. If not approved, please return with explanation.

6a, 6b, 6c,—
Monthly Estimates
7—Certificates
8—Change orders

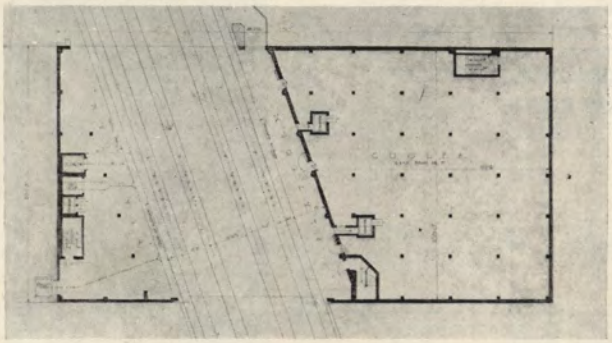
shown in Figure 5. These reports have often proved invaluable in checking back on the job or in case disputes arise after the work is about completed. If the architect is his own inspector he will do well to keep such a record himself.

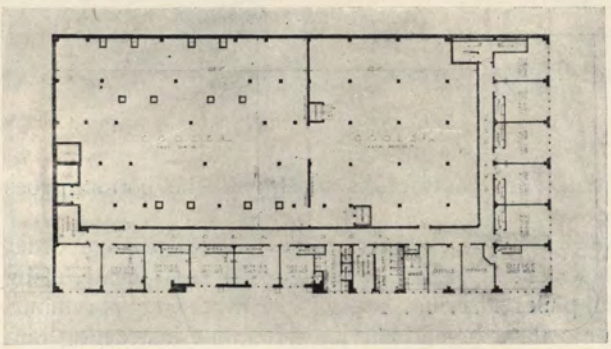
MONTHLY ESTIMATES. Experience has shown that it is rather difficult to obtain monthly estimates, or requests for payment, in the desired form or in a uniform manner from the several contractors. Unless such estimates are uniformly submitted it is difficult to check them. Hence the three-page form illustrated in Figure 6a, 6b, 6c at the top of the page, is furnished to the contractors as required for this purpose.

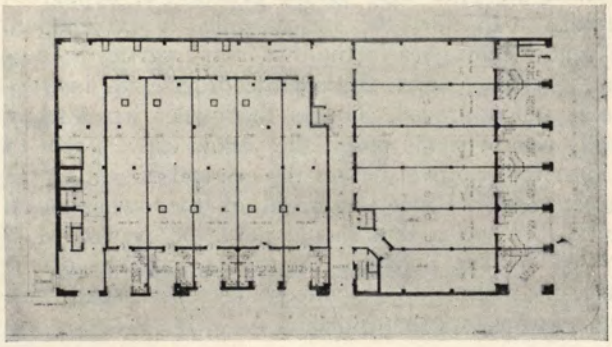
CERTIFICATES. Any good certificate should carry a statement showing the status of payments, credits and additions to date. Using the form shown in Figure 7, the certificate is made out in duplicate. The duplicate copy is on pink paper and is filed in the job book. The original, with contractor's receipt at the bottom, goes to the owner.

CHANGE ORDERS. A satisfactory type of change order is illustrated in Figure 8. It is made in triplicate, using white, pink and yellow paper. The white copy is retained by the contractor and carries a footnote instructing him to return the pink copy to the architect if approved; otherwise to return the order with an explanation. The yellow copy goes to the owner and carries a footnote requesting him to return the order with instructions if not approved. Unless the owner has already verbally approved the order, the yellow copy is sent to him first for approval before the original is sent to the contractor. This prior approval of the owner is an essential precaution that should never be overlooked.

CONTRACTS. The Standard Contract Documents of the American Institute of Architects have been used with success and are recommended.







MORE THAN A MILLION square feet of refrigerated storage space, an elevated track siding to accommodate five freight cars, and eleven stores, each with its private office and individual cooling area, are included in this cold storage warehouse on which construction will be started May 1st. The building covers more than half an acre of ground. The plan has been developed particularly to eliminate the costly trucking from rail to store and to provide a means of handling large quantities of produce with a minimum of time and effort. The freight siding, located at the fourth floor level, has direct connections with the main refrigeration space which has a capacity of 200 cars. From here automatic vertical conveyors will move the produce from floor to floor, to individual coolers in the stores or to customers' trucks at the street level. The terminal is planned for construction of reinforced concrete and steel, faced on the exterior with white enameled brick. Present specifications call for a continuous marquis of white metal and two large corner signs of blue terra cotta. The store fronts with large display spaces will be of white metal and glass, the piers between of white enameled brick. The cost of the structure is estimated at about $400,000

NEW YORK DRESSED POULTRY TERMINAL

NEW YORK CITY

FELLHEIMER & WAGNER, ARCHITECTS

The Advantages of Arbitration and How to Secure Them

BY CLINTON H. BLAKE
Blake and Voorhees, Counsellors-at-Law

THE movement for the settlement of disputes by arbitration has gained steadily in momentum and effectiveness, during the last few years. The idea upon which it was founded has always been sound and in accordance with common sense. The difficulty in its earlier stages was that the arbitrators chosen were usually friends of the respective parties to the dispute and acted more as partisan advocates than impartial judges. The result too often was that the matter was really settled by the third arbitrator selected on the basis of a compromise. This necessarily meant that in the majority of cases the man who had right on his side suffered and the man who was in the wrong had everything to gain by referring the dispute to arbitration rather than to a decision in court.

There has been a marked change in this situation in recent years. This has been due to the official recognition by the various states of the merits of arbitration in the settlement of disputes, to the enactment of state statutes giving legal effect to the decisions of arbitrators and making it possible for judgments to be entered thereon and, above all, to the development of various high-class arbitration associations, whose purpose it is to facilitate arbitration and to provide arbitrators who can and will, with ability and impartiality, settle the dispute submitted to them. Perhaps the best known of these arbitration associations is the "American Arbitration Association," with headquarters at 521 Fifth Avenue, New York City. This Association has created an unusually efficient organization, secured the services as arbitrators of men of ability, in various fields and is rapidly making a reputation as an effective and fair tribunal by means of which disputes may be promptly and fairly adjusted. It provides facilities for hearings, examination of witnesses and the like; and the cost of an arbitration under its procedure is extremely modest.

Architects become involved in more disputes probably than any other class of professional men. In part this is due to the fact that many architects give their attention primarily to the artistic phase of their work and do not give sufficient consideration to its business and legal phases. However, architects as a class are coming to realize increasingly the importance of attention to business and legal considerations in the set-up and conduct of their work, and the disputes resulting from a disregard of these considerations are becoming correspondingly fewer. In part, and generally, it is due to the fact that the practice of architecture necessarily presents opportunities for disagreements, claims and disputes. The obligation of a lawyer or a doctor is confined generally to his client or patient. The architect, on the other hand, has obligations, not only to his client, but to the contractor. And, moreover, he is faced with the questions of cost values, guarantees, extras, changes in the plans and specifications and the like, all of which are calculated to create misunderstandings. Much can be done to lessen the chances of misunderstandings and to safeguard the architect with respect to them. Nevertheless, no matter how careful and business-like he may be, he is likely to find himself involved in disputes with the client, the contractor or others. The possibilities of arbitration are therefore of special interest to the architectural profession.

There are many cases which are best left to the determination of a court. Claims which rest primarily upon a legalistic technicality or which are based upon involved legal questions and rights are of this class. On the other hand, the fact that legal considerations are involved does not mean that arbitration may not be the proper answer. If desired, lawyers can be secured as arbitrators, as well as others. This can be done either through one of the arbitration associations or by an arbitration set up by agreement of the parties and referred to arbitrators chosen by them and not carried on under the auspices of any arbitration society. Disputes as to fact, in which broad questions of ordinary business fairness and equity are involved, rather than legal technicalities, are, however, especially appropriate for determination by arbitration. Given a fair-minded arbitrator, possessed of common sense and a desirable amount of backbone, the parties will in such cases secure probably a determination which will be as satisfactory and as fair as that which would have resulted from the submission of the issues to a court or jury. In fact, so far as a jury is concerned it is well known that no clairvoyant has yet arisen who can foretell what a given jury is likely to do in a given case. The character of the usual jury panels is so varied and the considerations that enter into the decision of the jury are so difficult to analyze or foretell, that no lawyer or litigant can be sure what the verdict is to be until it is actually announced. Every lawyer has had the experience of winning a case which he had every reason to expect he would lose, and of losing a case which he had been confident he would win.

The chief advantages of arbitration are: (1) that it settles the dispute promptly; (2) that it usually settles the dispute with less hard feeling remaining than if the case were fought through in court; (3) that legal red tape and refined technicalities of evidence, which are the despair not only of laymen but of lawyers, are done away with; and (4) that there is a very large saving in legal fees and court costs and charges.

These are no mean advantages. The element of de-

lay in the crowded conditions of our courts today is alone of tremendous importance. The value of the right to sue a man in court and secure a judgment is greatly depreciated when it is found necessary to wait for a year or two years or more, before the case is reached for trial on the calendar. A prompt award by arbitrators and the settlement of the dispute within a matter of weeks or days, rather than of years, through the instrumentality of arbitration, may be far more advantageous, notwithstanding the possibility that the amount awarded by the arbitrators is less than the judgment which might finally be secured by legal proceedings.

I recently participated in the arbitration of a dispute involving an architect client, where the entire matter, including the hearing before the arbitrators, the rendering of their decision, the payment of the amount awarded and the settlement of the dispute for all time, was disposed of in the course of a day. The same case, if it had been determined in court, would probably not have been reached for decision for two years, would have involved far heavier legal expense and would have undoubtedly necessitated a serious waste of time on the part of the architect and his witnesses in attending court and awaiting the commencement of the trial. This is typical of arbitration at its best and of the goal toward which those interested in promoting arbitration are steadily advancing.

In submitting disputes to arbitration, it is important that the agreement pursuant to which they are submitted be in proper legal form, so that the award of the arbitrators may be made legally effective under the laws of the state where the arbitration takes place or under the federal laws where an arbitration is carried out involving federal jurisdiction. It is my understanding that properly drawn arbitration agreements will now be recognized as valid and enforceable under the arbitration laws of Arizona, California, Connecticut, Louisiana, Massachusetts, New Hampshire, New Jersey, New York and Pennsylvania and under the Federal Arbitration Law. The standard arbitration clause of the American Arbitration Association, for use in disputes such as those in which architects are likely to become involved, is as follows:

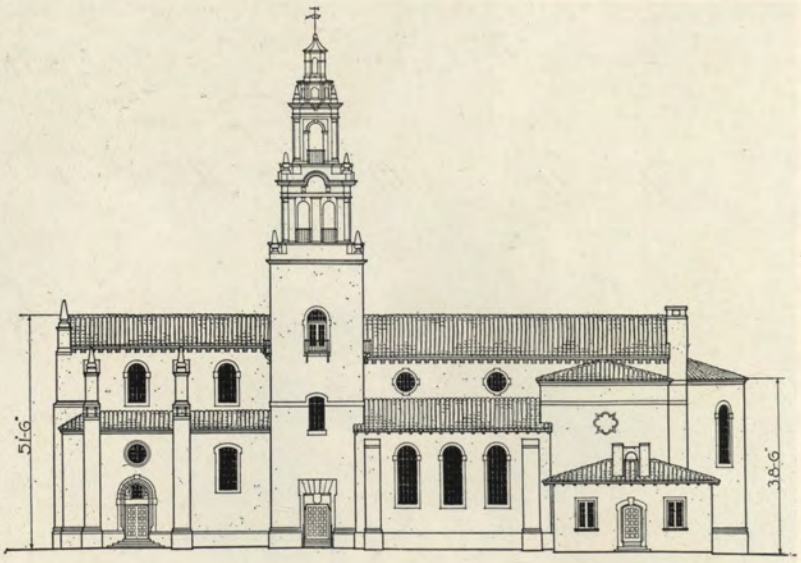
"Any controversy or claim arising out of or relating to this contract, or the breach thereof, shall be settled by arbitration in accordance with the Rules, then obtaining, of the American Arbitration Association, and judgment upon the award rendered may be entered in the highest court of the forum, state or federal, having jurisdiction."

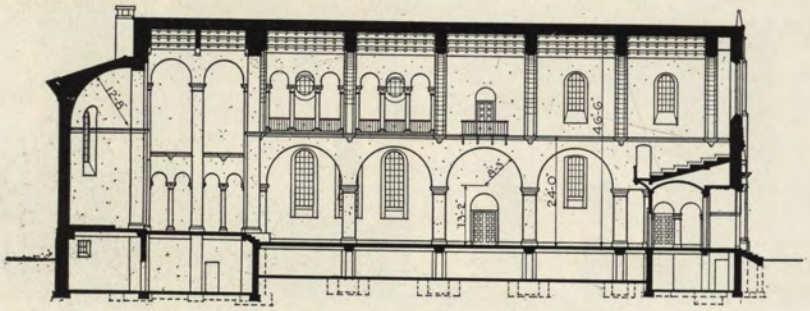
It is important that care be exercised in the submission of the dispute. The architect will do well to take legal advice in this connection, to the end that the matters referred to the arbitrators may be clearly defined, the powers of the arbitrators and their limitations, if any, made definite, and the provisions for submitting the issue to the arbitrators so drawn as to make the award when given effective. There is no use in embarking upon an arbitration on a loose basis which will invite thereafter the very litigation which the arbitration seeks to avoid. The chief purposes of the arbitration are to avoid legal expense, delays, difficulties and uncertainties. To do this, and to secure the maximum benefit from the resort to arbitration, it is in the interest of both parties to see that the issue presented to the arbitrators is clear-cut and that the arbitrators be clothed with authority to enable them speedily, fairly and, so far as possible, finally, to settle the issues involved.

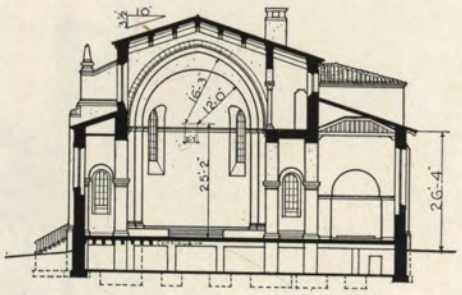
"THE MOUNDS OF HOLLYWOOD"

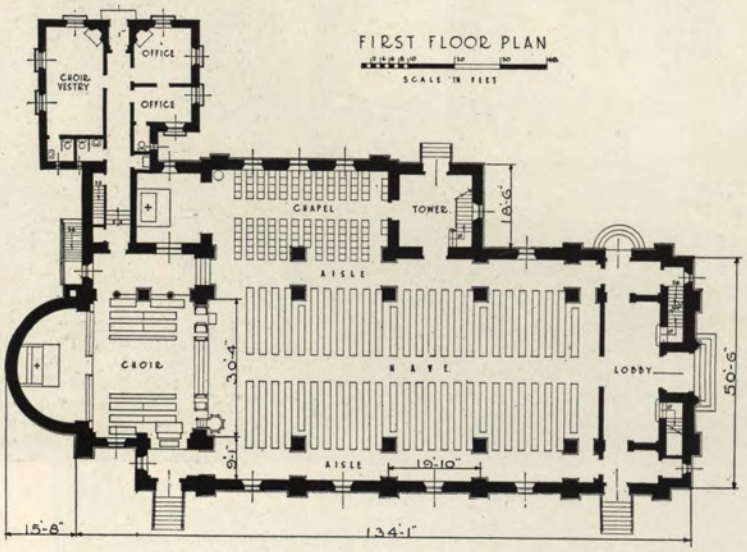
A lithograph pencil drawing by Carl W. Heilborn

KNOWLES MEMORIAL CHAPEL
ROLLINS COLLEGE, WINTER PARK, FLORIDA
CRAM AND FERGUSON, ARCHITECTS; KIEHNEL AND ELLIOTT, ASSOCIATE ARCHITECTS









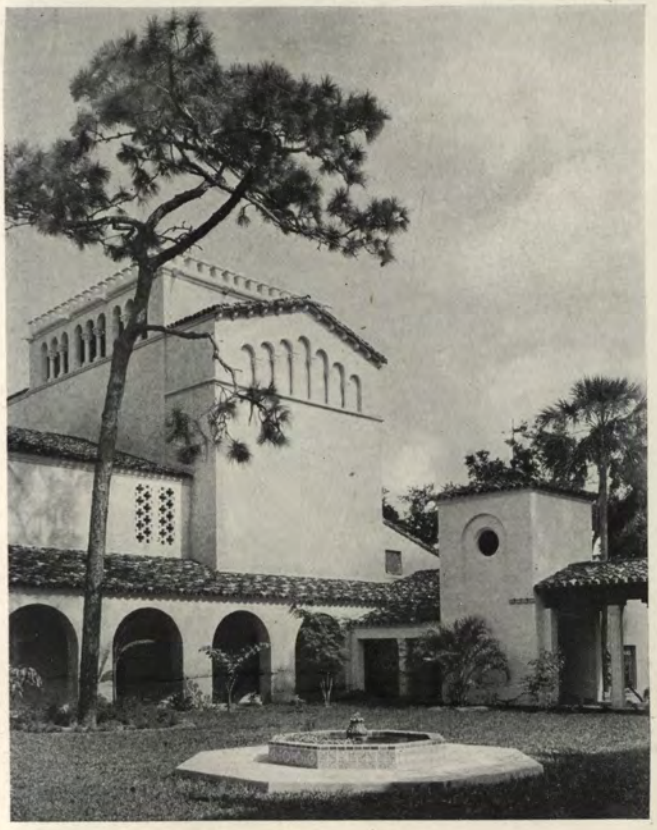
DESIGN: Appropriate to the Spanish tradition of Florida and conforming to the building type established by the college dormitories, a modified version of middle 17th Century Spanish Renaissance was made the basis of the design

CONSTRUCTION: Walls, terra cotta tile and brick. Floors, reinforced concrete. Stone trim and upper portion of tower, Florida travertine. Exterior walls, rough stucco, reddish cream color. Roof, red and brown Spanish tiles. Interior walls, upper portion sound-absorbing plaster; lower portion hard plaster painted gray. Floors, aisles, vestibule, choir, unglazed red tile; under pews, cork tile; apse, marble. Ceiling, nave and chancel, cypress and sound-absorbing material

KNOWLES MEMORIAL CHAPEL, WINTER PARK, FLA. CRAM & FERGUSON, ARCHITECTS; KIEHNEL & ELLIOTT, ASSOC. ARCHTS.

E. J. LAWRENCE

A cloister enclosing a garden connects the chapel with a small theater



Cloister garth and rear of adjoining theater

Detail of main entrance

KNOWLES MEMORIAL CHAPEL, WINTER PARK, FLA. CRAM & FERGUSON, ARCHITECTS; KIEHNEL & ELLIOTT, ASSOC. ARCHTS.

PAGE STUDIO

Apse, cypress paneling; choir stalls, organ screens and pulpit, American walnut. Altar, Hauteville Verde Antique and Violet Brocatelle marbles. Apse floor, alternating squares Red Levanto and Verde Antique marbles; base and step, Belgian Black marble, Choir floor, unglazed red tile

THE NAVE. Ceiling of both nave and chancel, cypress, beamed, paneled and decorated in color. Walls, plaster; arches, Florida travertine; aisle floor, unglazed red tile. Lighting fixtures, specially designed to eliminate glare, have a central baluster of wood and pierced aluminum screen about the bulbs

KNOWLES MEMORIAL CHAPEL, WINTER PARK, FLA. CRAM & FERGUSON, ARCHITECTS; KIEHNEL & ELLIOTT, ASSOC. ARCHTS.

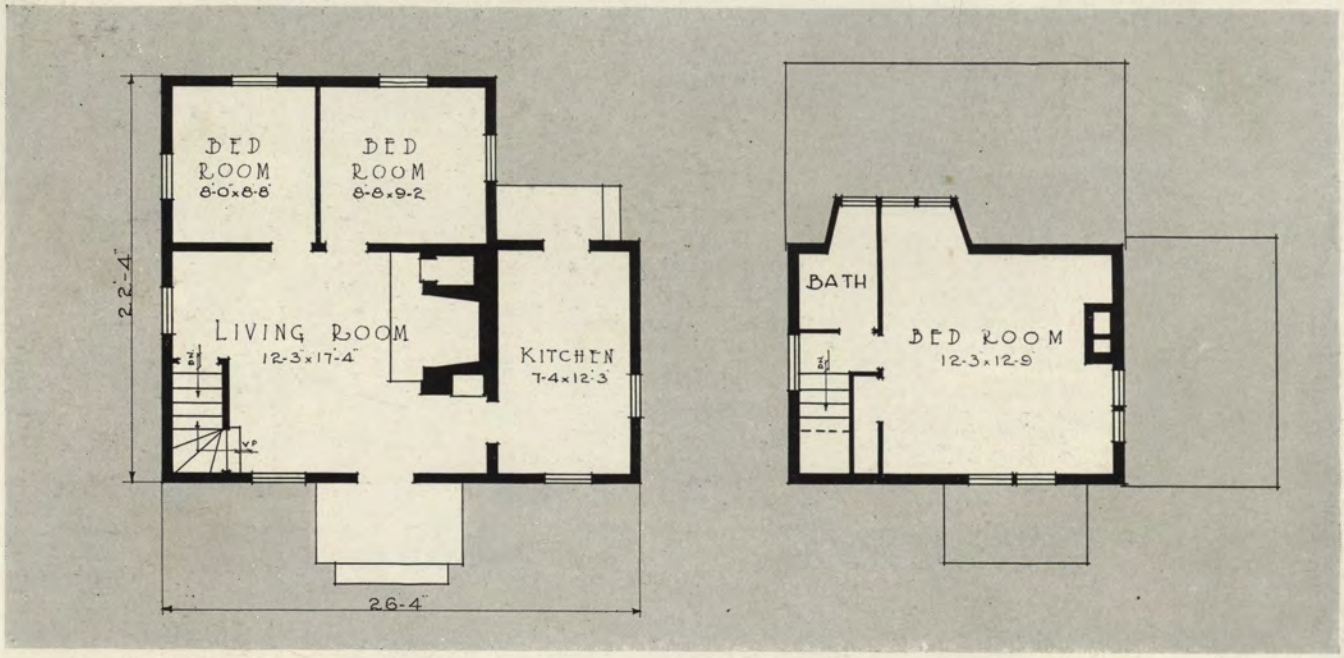
STAINED GLASS WINDOW over the main entrance of the chapel. This is one of three colorful windows, the other two being in the apse on either side of the atlar. Those in the apse have richly ornamented cartouches against silvery geometric backgrounds. The one above symbolizes the importance of scholastic training. The design of all three was inspired by the best work of the Italian Renaissance. Designed and executed by Wilbur Herbert Burnham

KNOWLES MEMORIAL CHAPEL, WINTER PARK, FLA. CRAM & FERGUSON, ARCHITECTS; KIEHNEL & ELLIOTT, ASSOC. ARCHTS.

HOUSE OF MRS. CORA MOLLY NEEL, CANNONDALE, CONN.

C. E. TANNER, ARCHITECT

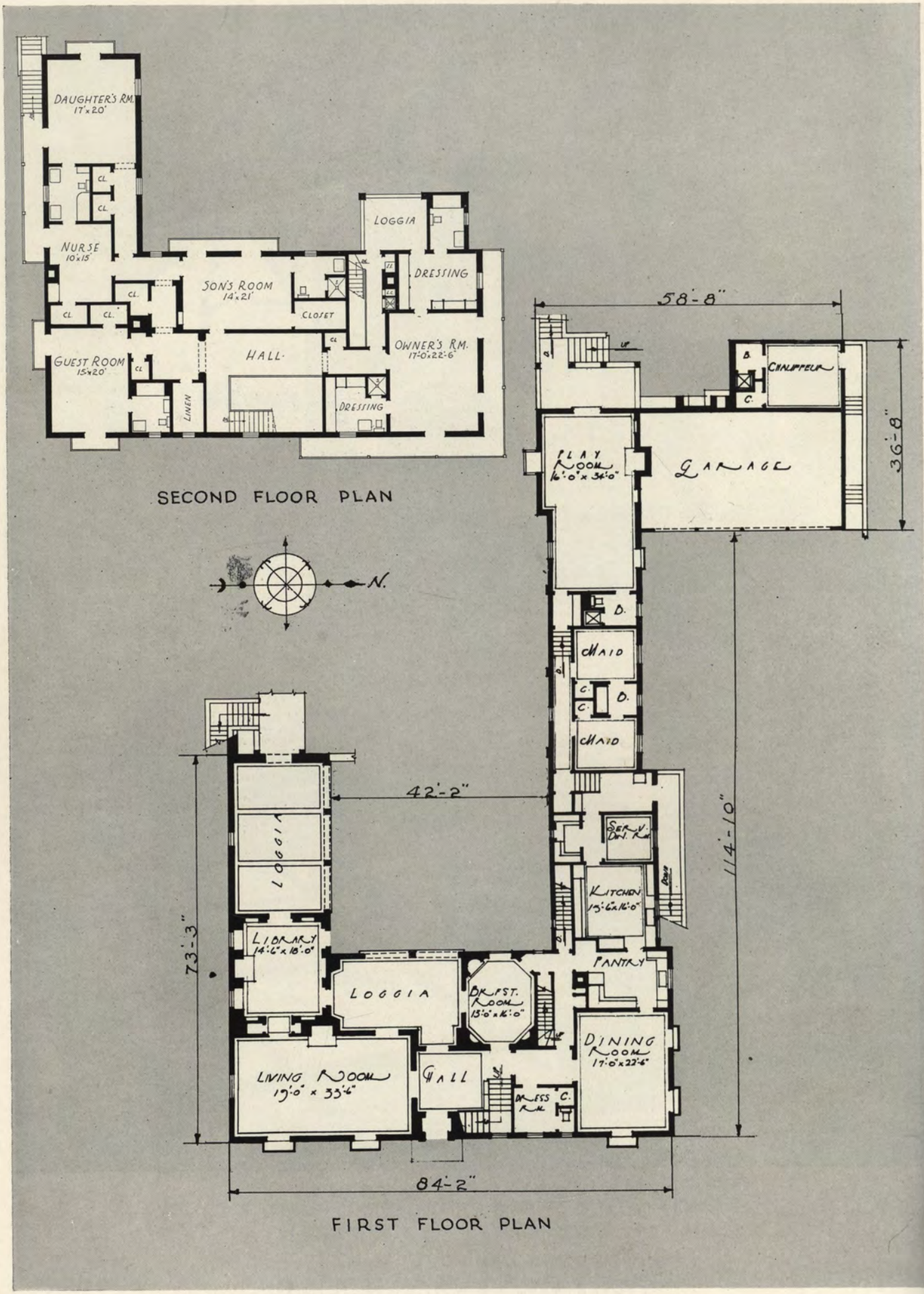
Photographs by George Van Anda

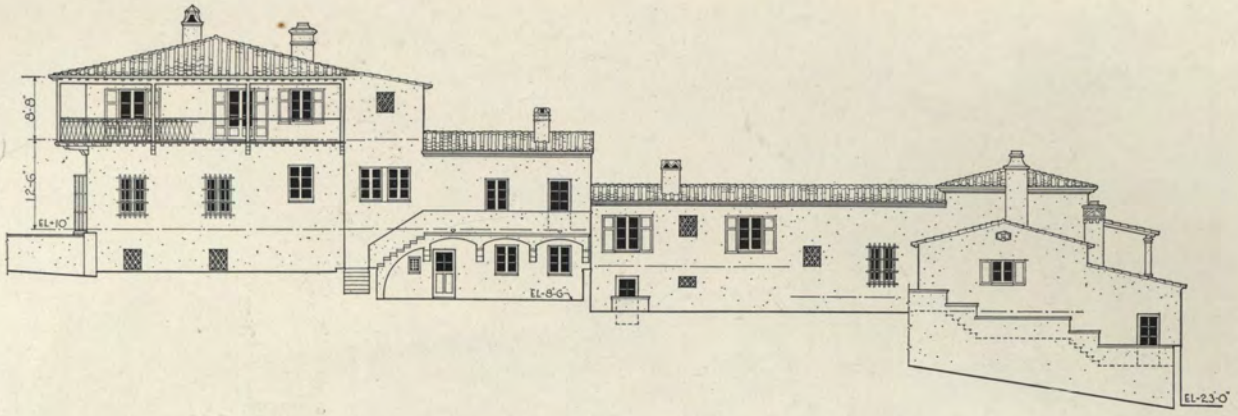


Construction: Heavy timber frame. Foundation and chimney, local stone. Exterior, redwood siding, painted white. Roof, weathered cedar shingles. Shutters, dark green. Front door, blue. Interior, slightly uneven plaster, painted oyster white. Approximate cost, $3,500

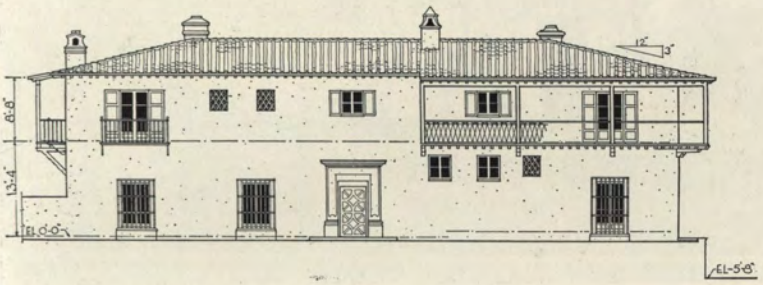
HOUSE OF MRS. CORA MOLLY NEEL, CANNONDALE, CONN. C. E. TANNER, ARCHITECT

HOUSE OF PAUL H. HELMS
LOS ANGELES, CALIFORNIA
GORDON B. KAUFMANN, ARCHITECT
Photographs by William M. Clark

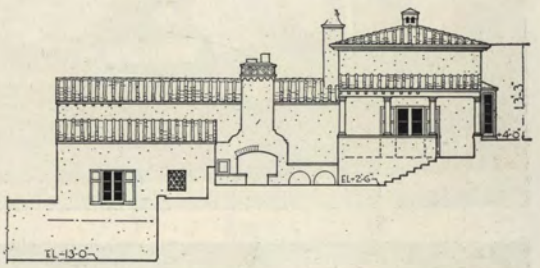

DAUGHTER'S RM. 17'x20'
CL.
CL.
NURSE 10'x15'
CL.
CL.
CL.
SON'S ROOM 14'x21'
CLOSET
LOGGIA
DRESSING
HALL
OWNER'S RM. 17'-0"x22'-6"
GUEST ROOM 15'x20'
CL.
LINEN
DRESSING
SECOND FLOOR PLAN
58'-8"
CHAUFFEUR
B.
C.
PLAY ROOM 16'-0"x34'-0"
GARAGE
36'-8"
N.
D.
MAID
C.
D.
C.
MAID
42'-2"
SERV'T DN'G. RM.
KITCHEN 15'-6"x16'-0"
PANTRY
114'-10"
LOGGIA
LIBRARY 14'-6"x18'-0"
73'-3"
LOGGIA
BR'FST. ROOM 15'-0"x16'-0"
DINING ROOM 17'-0"x22'-6"
LIVING ROOM 17'-0"x35'-6"
HALL
DRESS. RM.
C.
84'-2"
FIRST FLOOR PLAN



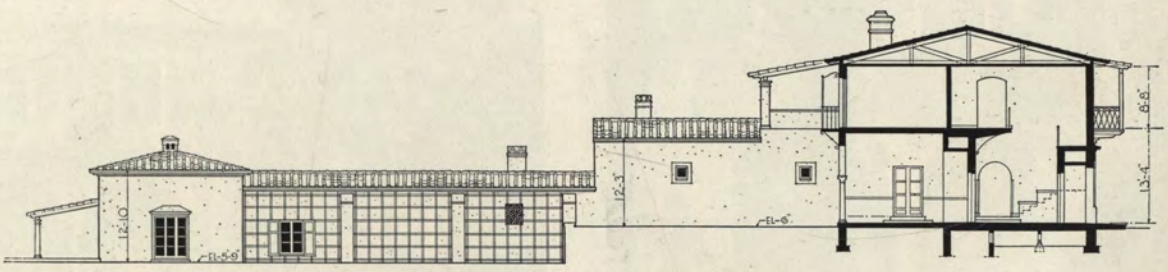
North Elevation



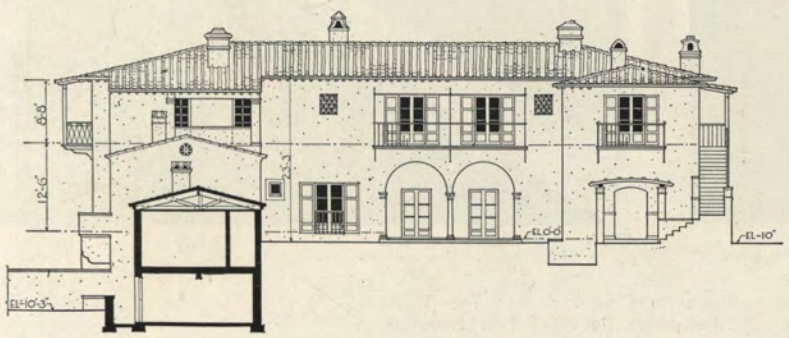
East Elevation



West Elevation



Section Through Court Looking North



Section Through Court Looking East

CONSTRUCTION: Wood frame, concrete foundation. Exterior, hand-finished stucco with pinkish cast. Window frames and shutters, pine, painted Paris green. Rafters, pine, stained and oiled. Roof, hand-made Italian tile. Interior walls, slightly uneven plaster, painted dull white. Trim, white cedar; paneling, walnut, antique finish. Heating is by twelve gas-fired furnaces in basement and electrically controlled from individual rooms. Cubage, exclusive of basement, 130,000 cu. ft. House completed 1930

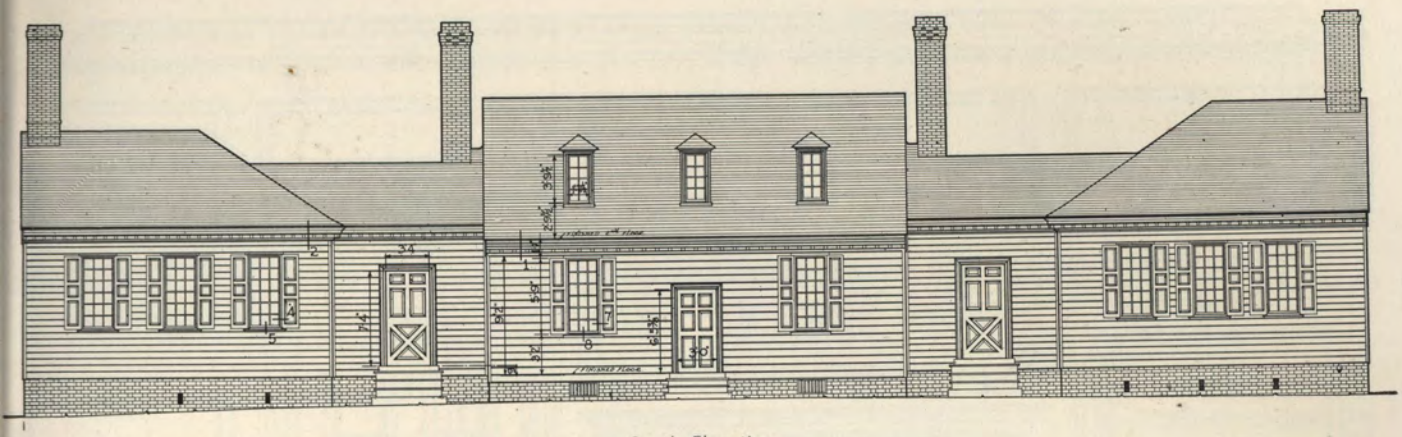
HOUSE OF PAUL H. HELMS, LOS ANGELES, CALIFORNIA. GORDON B. KAUFMANN, ARCHITECT

Above: East Elevation from Street. Below: Two Views of Court. On opposite page: Detail of East Elevation

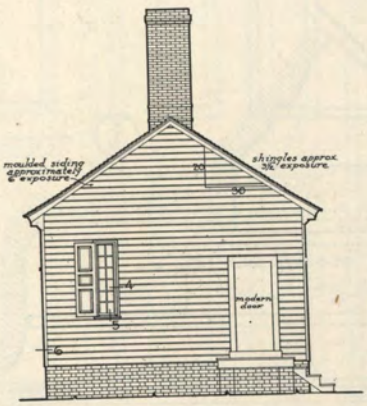
HOUSE OF PAUL H. HELMS, LOS ANGELES, CALIFORNIA. GORDON B. KAUFMANN, ARCHITECT

Stair Hall Looking Toward Living Room

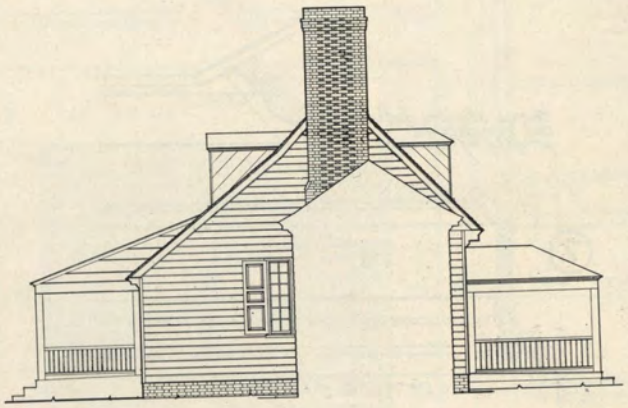
HOUSE OF PAUL H. HELMS, LOS ANGELES, CALIFORNIA. GORDON B. KAUFMANN, ARCHITECT



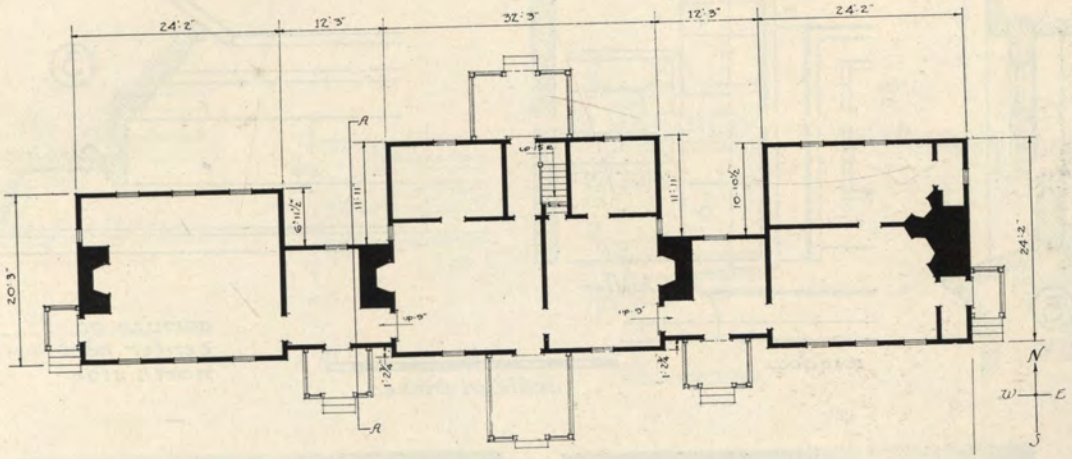
South Elevation



West End Elevation



Section A-A

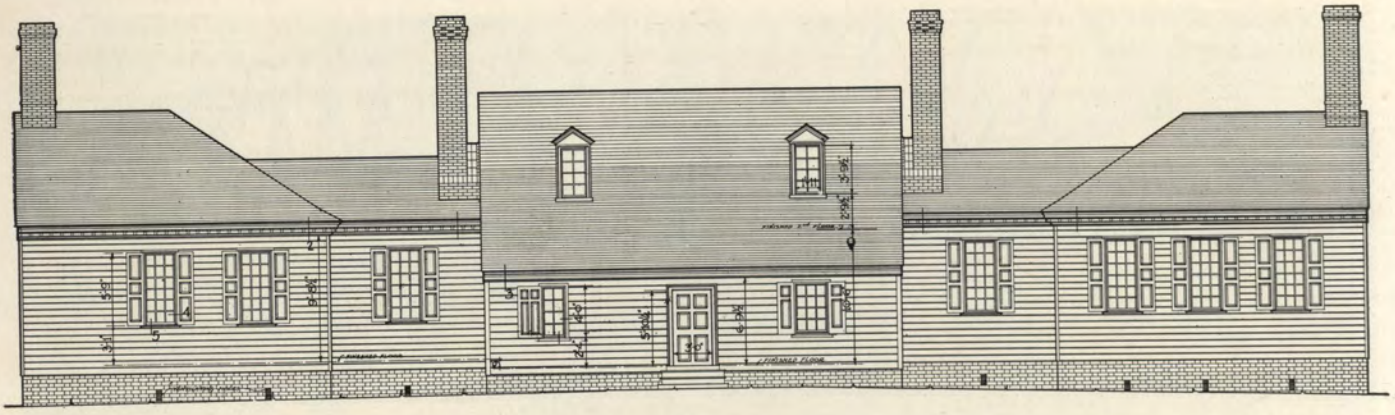


First Floor Plan

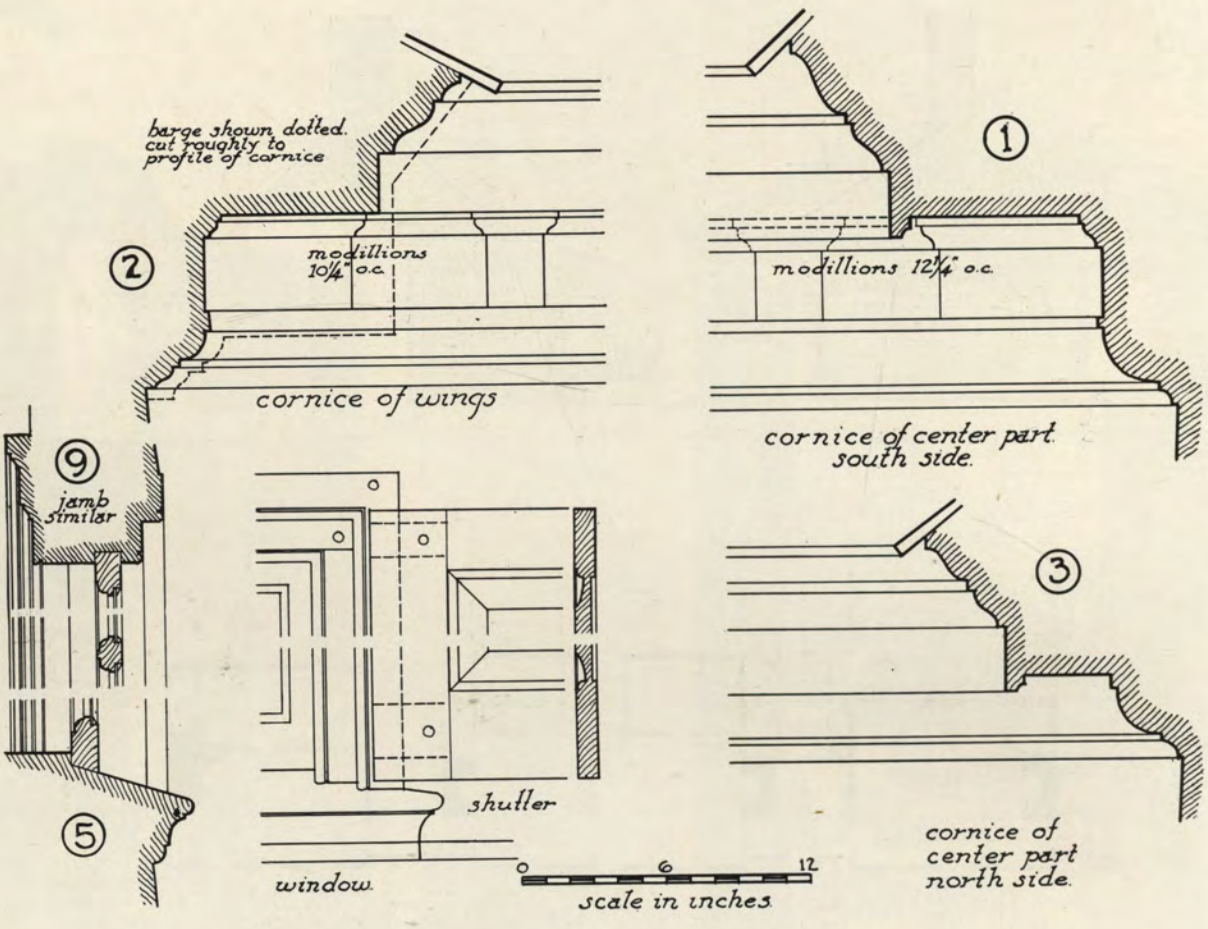
"WALES," DINWIDDIE COUNTY, VIRGINIA

MEASURED AND DRAWN BY W. F. DREWRY, JR.

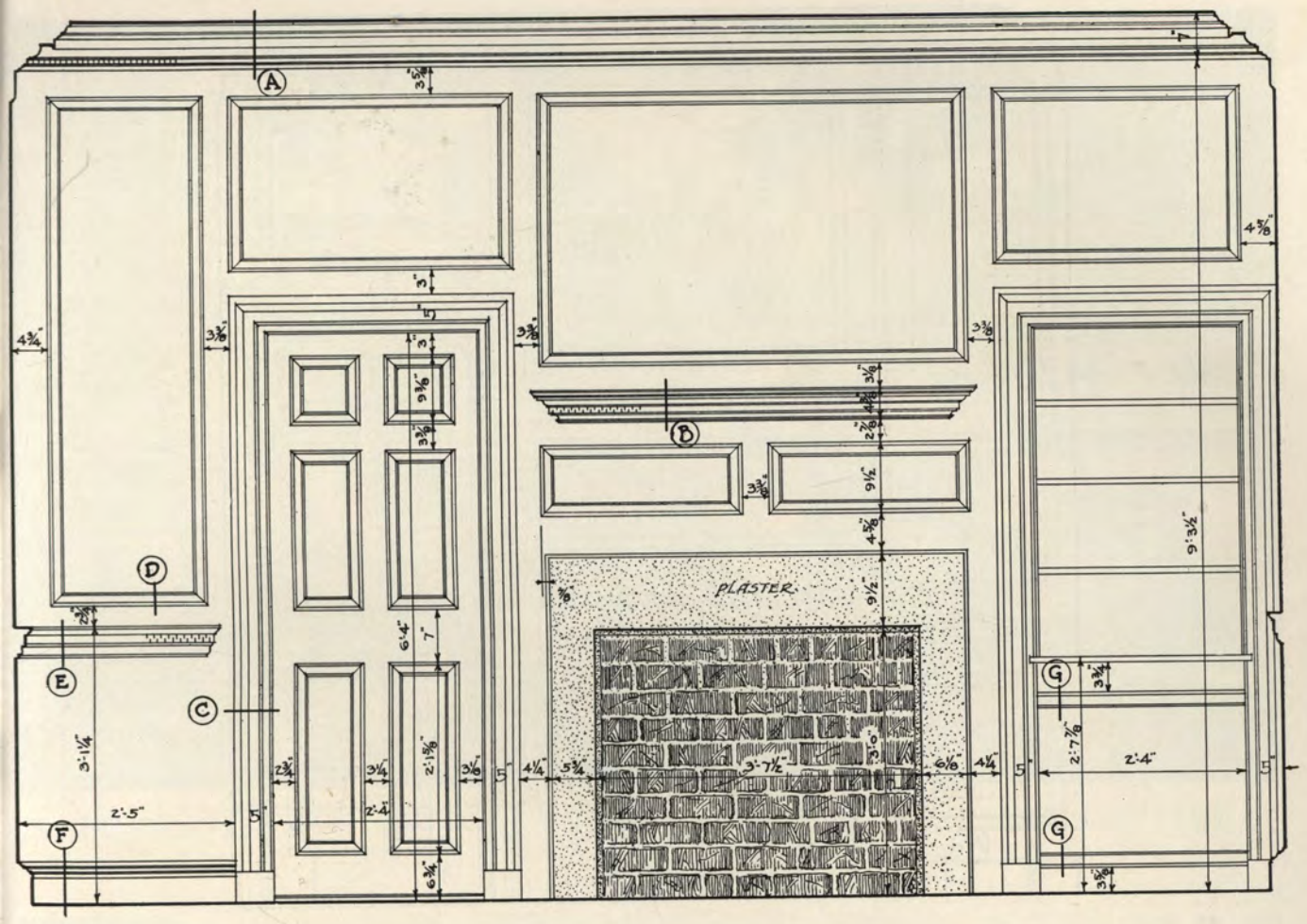
The original house apparently consisted of the central rectangular portion with free standing chimneys, the two wings being added at a later date. In detail the house is typical of other houses of its period and location, notably the use of oversize brick, glazed headers laid in pattern, moulded siding and raised panels of the doors and shutters. The dormers on the north elevation are probably a later addition. The porches are of fairly recent origin. The house is in unusually good condition and stands substantially as originally built in the early part of the 18th century

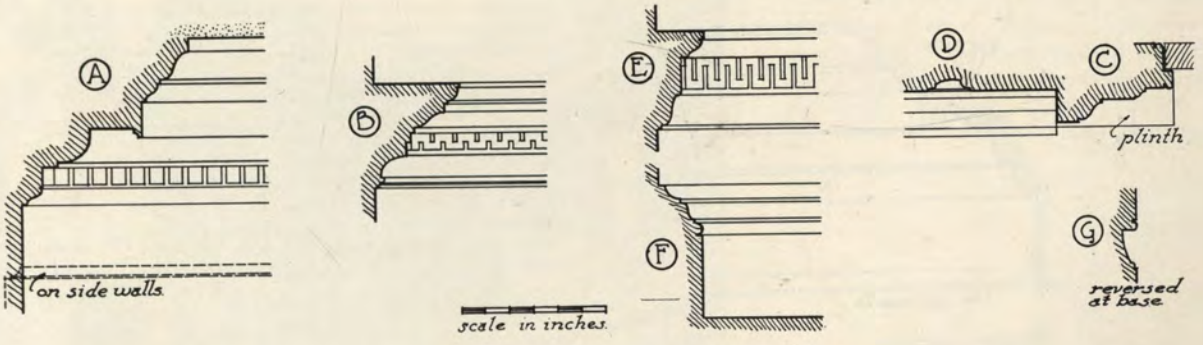


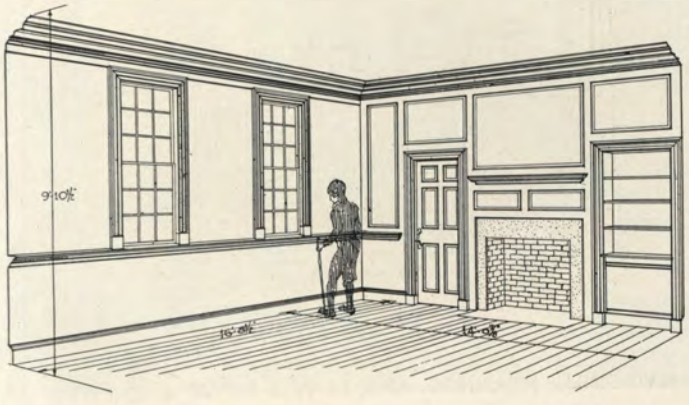
North Elevation



"WALES," DINWIDDIE COUNTY, VIRGINIA. MEASURED AND DRAWN BY W. F. DREWRY, JR.



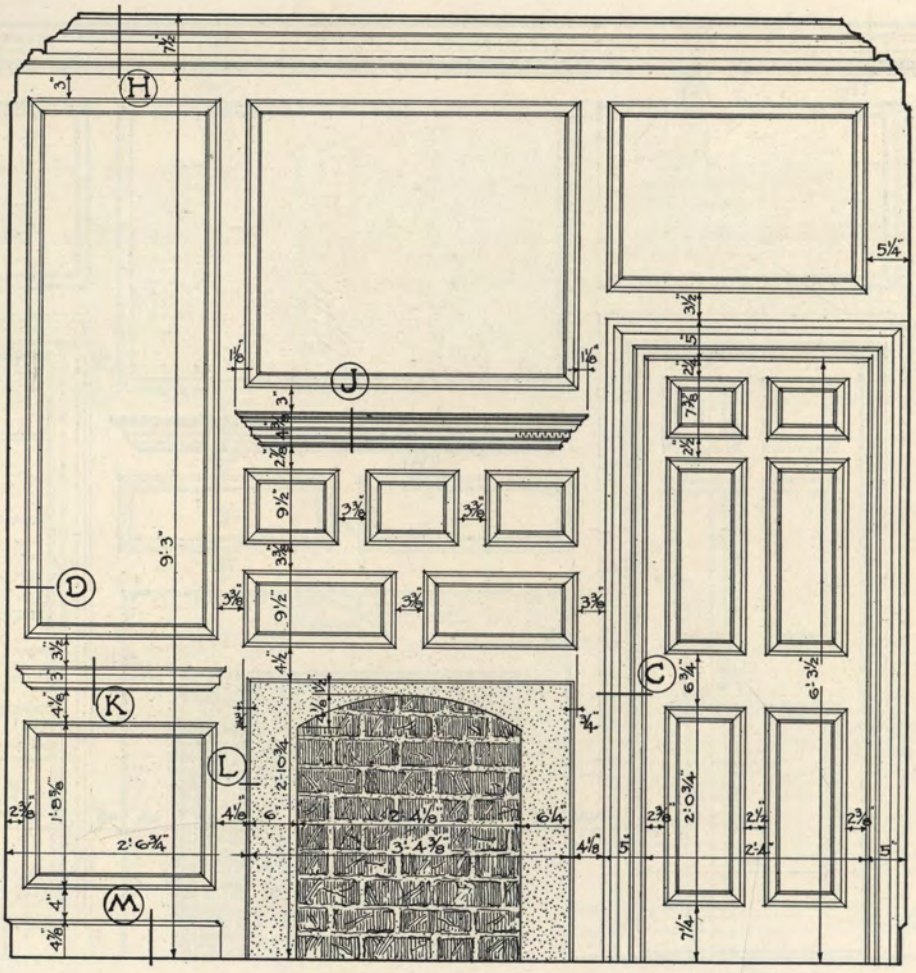


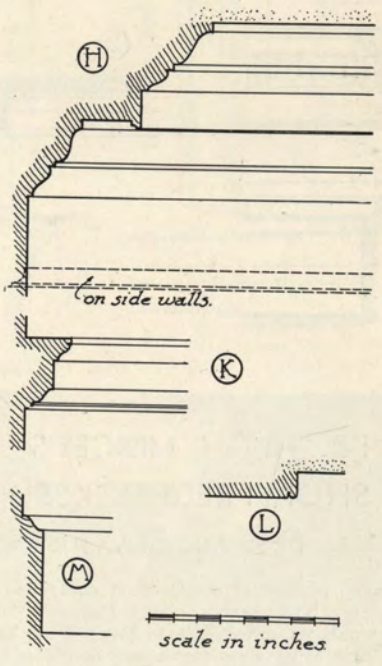


DR. HUGH MERCER'S APOTHECARY SHOP, FREDERICKSBURG, VIRGINIA

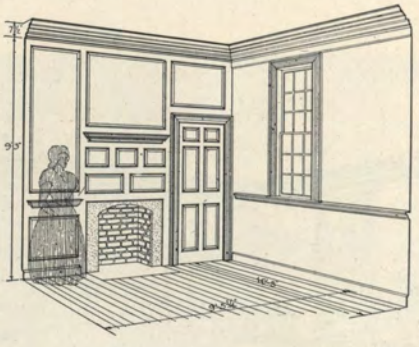
MEASURED AND DRAWN BY W. F. DREWRY, JR.

The portion of the building containing this room was probably built before 1700. Prior to the Revolutionary War additions were made to the original house and used by Dr. Mercer as a residence and apothecary shop. It is unlikely that the house was built with much thought to its architectural design. The wood paneled fireplace end of this room would indicate that the architecture was made to conform to conditions presented by plan and construction. The door leads to an entrance vestibule formed by the massive chimney. The floor is of pine planks 4½" to 7" wide. In restoring the building the wall below the chair rail has been painted blue and the walls above, yellow-buff





This well-proportioned little room adjoins the larger room shown on the previous page. Connecting with the apothecary shop, it was probably used as an office. The woodwork has been painted dark blue-green and the plaster walls gray-green. The floor is of pine planks. The size of the room is about 9'6" x 10'6", and the ceiling height 10'. The door adjacent to the fireplace opens into a closet formed by the space between the massive chimney and the outside wall. This building has been restored and furnished in the character of its time



DR. HUGH MERCER'S APOTHECARY SHOP, FREDERICKSBURG, VIRGINIA. MEASURED AND DRAWN BY W. F. DREWRY, JR.

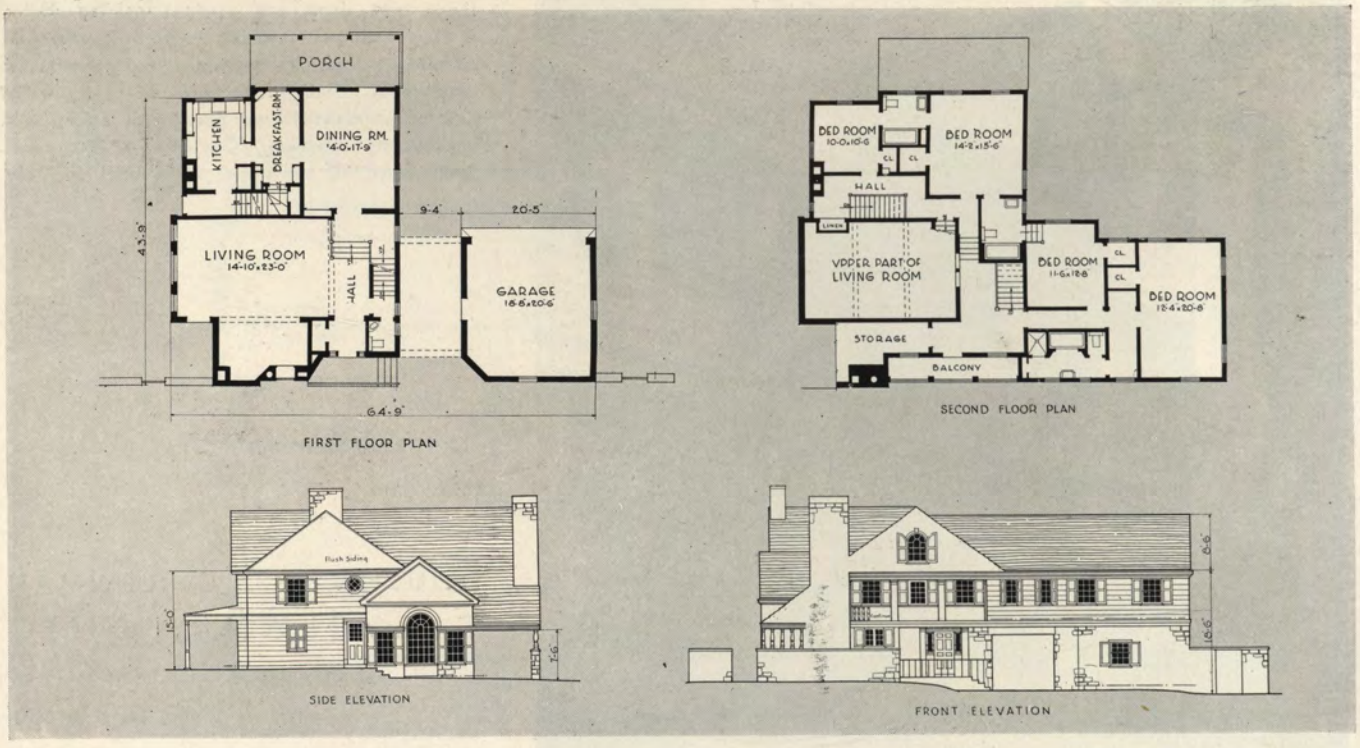
FRONT ELEVATION, SHOWING MAIN ENTRANCE AND DRIVEWAY TO GARAGE

Outside walls are of stone, plaster and wood siding, painted white. Roof of sea-green slate variegated with a small percentage of rustics. Exterior trim, doors and windows painted white; shutters blue-green. Living room and entry hall paneled in chestnut, stained a light weathered gray-brown. Dining room walls of knotty white pine of warm weathered gray-brown color; ceiling slightly modeled. Contents, 38,200 cubic feet. Cost, 90 cents per cubic foot in 1929

HOUSE OF F. C. LEWMAN
CLEVELAND, OHIO
JOHN SHERWOOD KELLY, ARCHITECT

Photographs by Ernest Graham Studio

PINE PANELED DINING ROOM



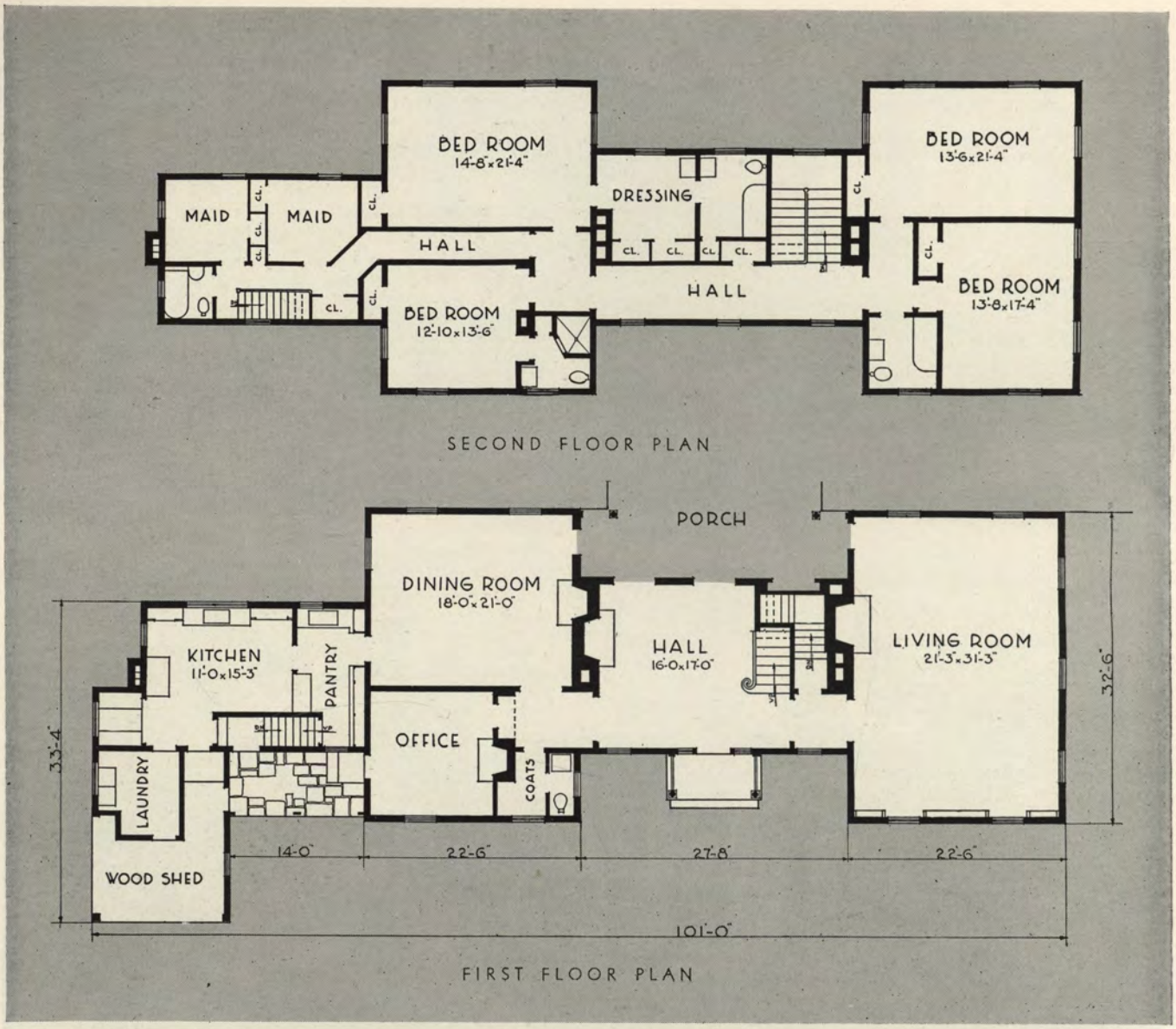
FLOOR PLANS AND PRINCIPAL ELEVATIONS

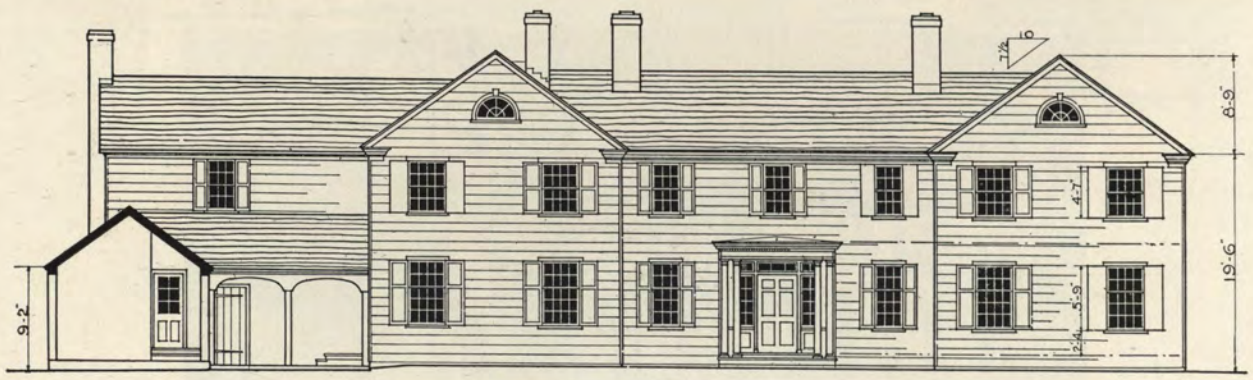
HOUSE OF F. C. LEWMAN, CLEVELAND, OHIO. JOHN SHERWOOD KELLY, ARCHITECT

MERRILL

ALTERATIONS TO THE HOUSE OF LOCKWOOD F. YOUNG
GENESEO, NEW YORK

ROBERT E. SHERLOCK, ARCHITECT





The kitchen wing shown at the right end of the original house was separated from the center portion, turned 90 degrees and moved far enough to permit the erection of a new section containing the present dining room and study. A new laundry wing leading to a five-car garage was added. Other work included: new roof of black Vermont slate; sidewalls covered with hand split cypress shingles; exterior walls and main partitions and floors filled wth 22 tons of heat and sound insulating material. Vapor heating with air conditioning unit and oil burner. Old white pine boards and planks from dismantled stable used with clover leaf battens to construct garage wing and for siding under main porch. Same wide boards formed paneling in study. Main house cubic contents, 70,300; garage and porches taken full, 24,900 cubic feet. Alterations completed 1929

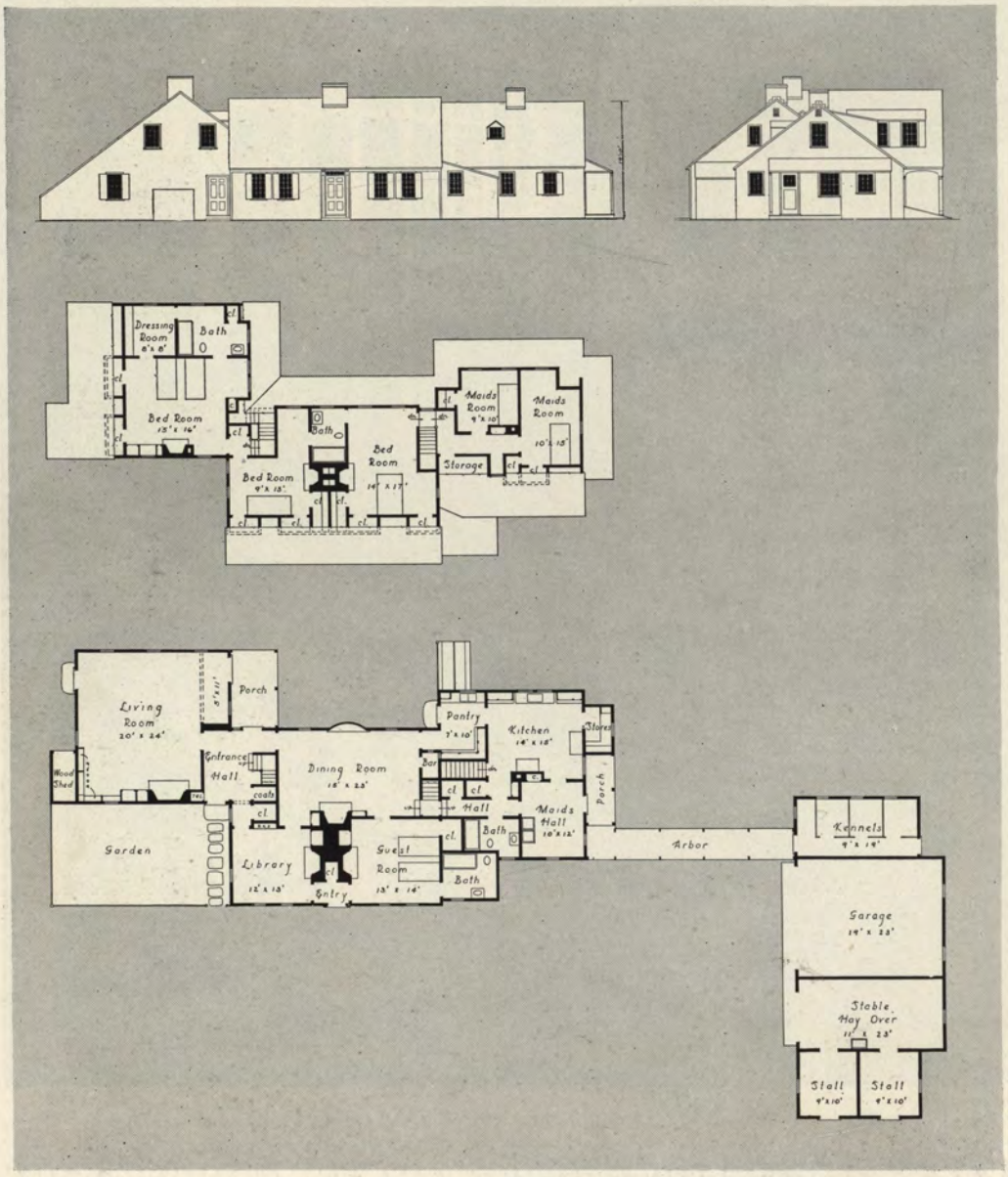
ALTERATIONS TO THE HOUSE OF LOCKWOOD F. YOUNG, GENESEO, NEW YORK. ROBERT E. SHERLOCK, ARCHITECT

Detail of Exterior, Showing Dining Room Bay

HOUSE OF CHARLES C. BELLOWS, NEW CANAAN, CONNECTICUT

CHARLES S. KEEFE, ARCHITECT

Photographs by George Van Anda



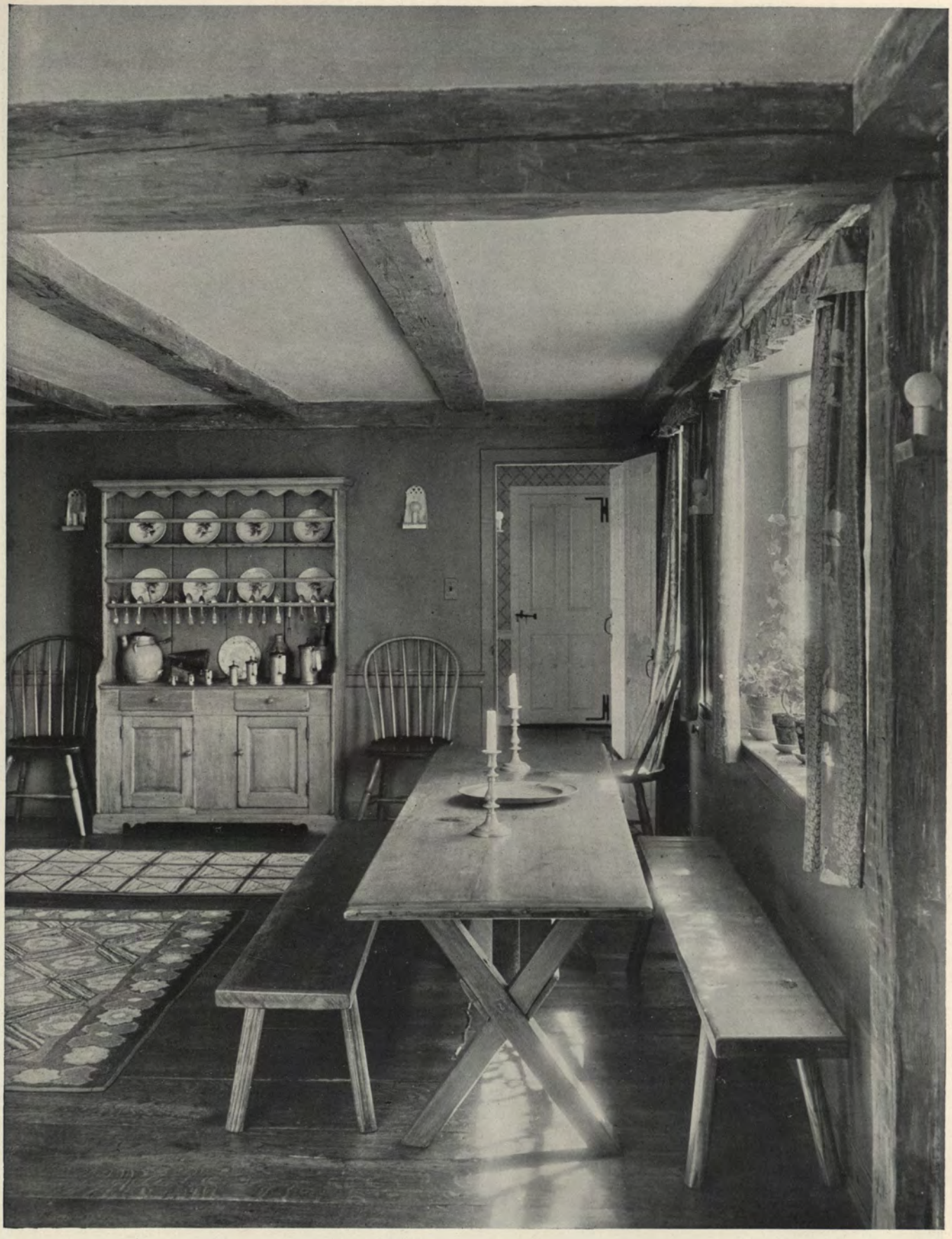
Center part is a reproduction of an old Cape Cod house, much of the material used being taken from an old house purchased by the owner. Old materials from various sources were used throughout

Exterior walls covered with rived cypress shingles stained dark brown. Roof, cedar shingles left to weather. Trim, doors and shutters are white

Living room wing, 11,950 cubic feet; main part, 20,944 cubic feet; service wing, 10,596 cubic feet; total, 43,490 cubic feet. Ceiling, 7 feet

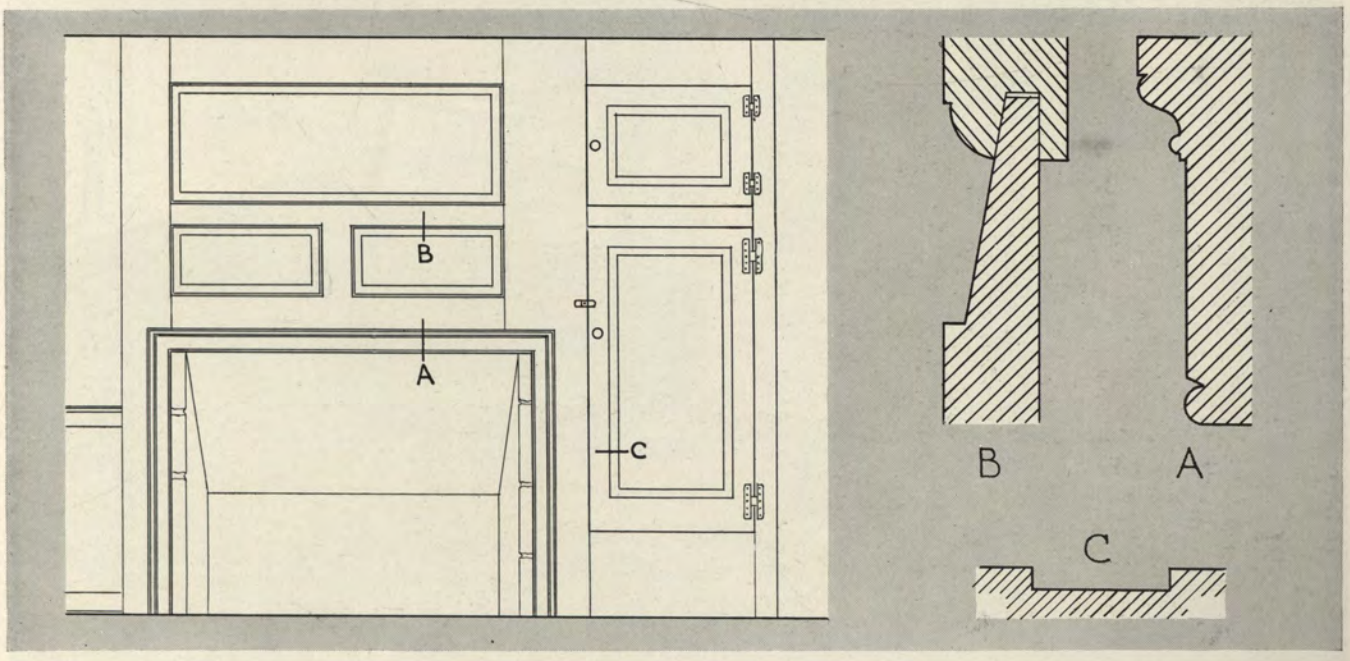
HOUSE OF CHARLES C. BELLOWS, NEW CANAAN, CONN. CHARLES S. KEEFE, ARCHITECT

HOUSE OF CHARLES C. BELLOWS, NEW CANAAN, CONN. CHARLES S. KEEFE, ARCHITECT



Dining Room, Looking Towards Living Room

HOUSE OF CHARLES C. BELLOWS, NEW CANAAN, CONN. CHARLES S. KEEFE, ARCHITECT



Dining Room Fireplace

HOUSE OF CHARLES C. BELLOWS, NEW CANAAN, CONN. CHARLES S. KEEFE, ARCHITECT

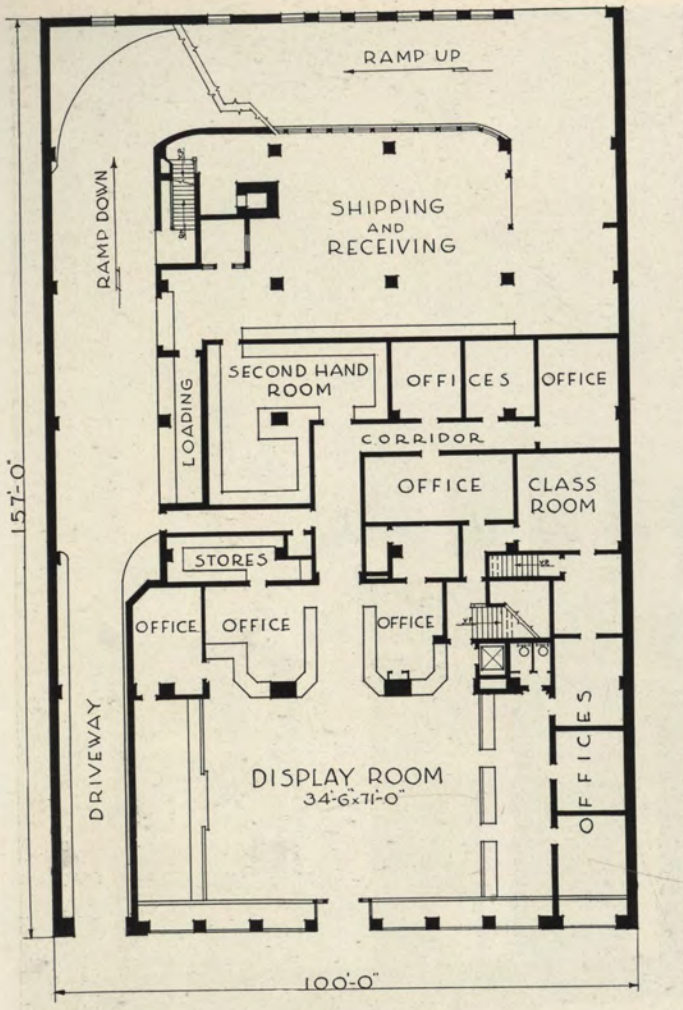
Stairway in Entrance Hall

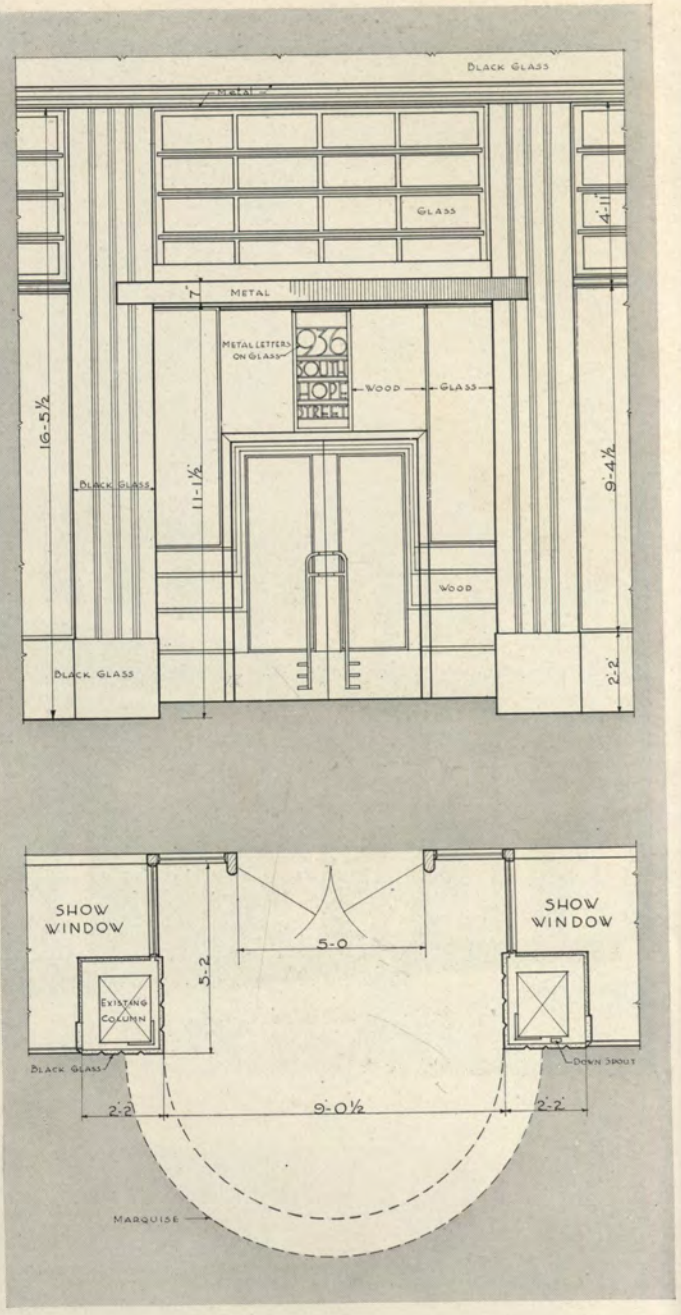
HOUSE OF CHARLES C. BELLOWS, NEW CANAAN, CONN. CHARLES S. KEEFE, ARCHITECT

ALTERATIONS TO STORE FOR
NATIONAL CASH REGISTER COMPANY
LOS ANGELES, CALIFORNIA

WILLIAM RICHARDS, ARCHITECT

Photographs by Mott Studios





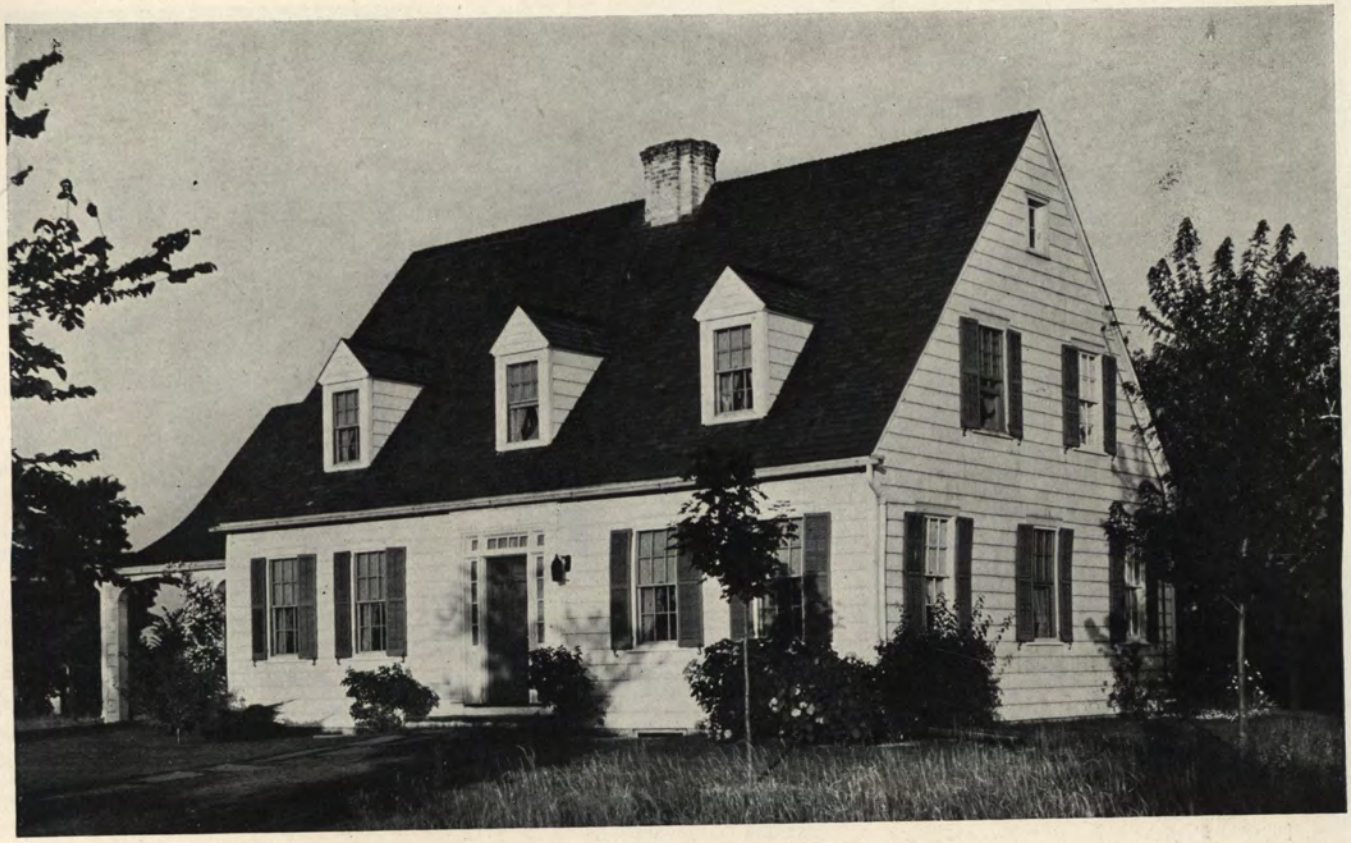
DESIGN AND CONSTRUCTION: Originally, automobile sales and repair building. Ramps now used as entrances to second floor repair shop and basement parking space. Original exterior, brick and terra cotta. New exterior, light buff cast stone slabs, polished black glass and plaster in varying shades of buff. Metalwork, polished white metal. Entrance woodwork, light emerald green. Marquise, steel cantilever frame, sheet metal roof, crimped white metal edge, soffit, aluminum leaf on plaster. Center panel of marquise and above doors, flash glass illuminated from behind. Sidewalk, cement colored green. Building completed in 1930

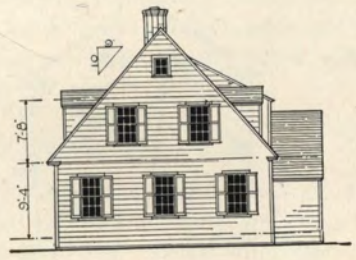
STORE FOR NATIONAL CASH REGISTER CO., LOS ANGELES, CAL. WILLIAM RICHARDS, ARCHITECT

936
SOUTH
HOPE
STREET
THE
NATIONAL
CASH
REGISTER
COMPANY
THE
NATIONAL
CASH
REGISTER
COMPANY

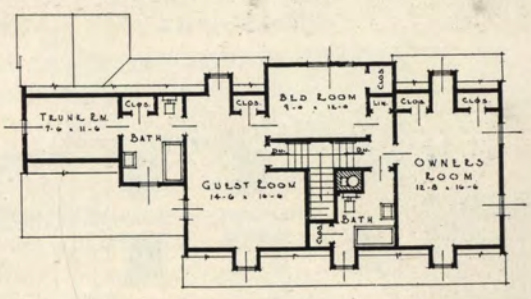
DISPLAY ROOM: Original tile floor, shades of dull brown, retained. Base, black. New wood wainscot shades from dark buff at bottom to light at top. Counters and display cases, Bataan veneer, stained walnut. Walls and ceiling, light tan with designs in darker tans and blue. Moulded plaster at openings, picked out in dull silver. Lighting fixtures, white metal and flashed white opal glass

STORE FOR NATIONAL CASH REGISTER CO., LOS ANGELES, CAL. WILLIAM RICHARDS, ARCHITECT



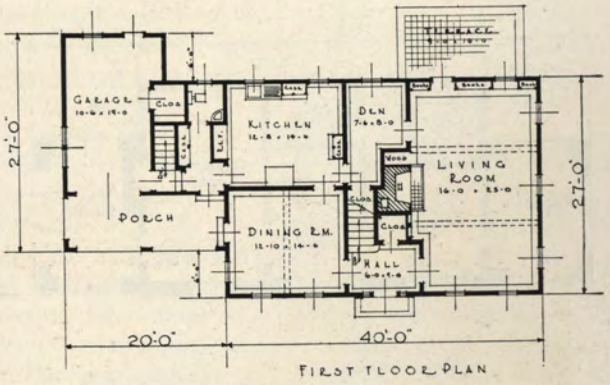


Side Elevation



Second Floor Plan

Front Elevation



First Floor Plan

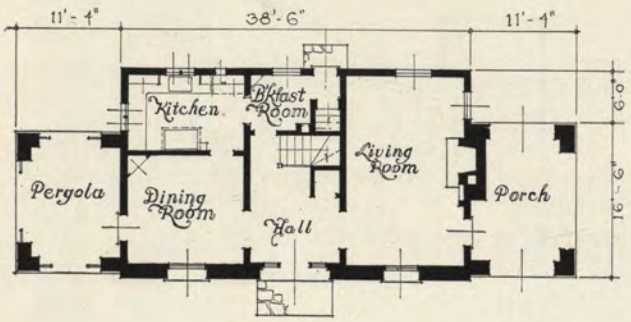
Construction, frame. Roof, wood shingles. Walls, shingles, painted white. Exterior woodwork, pine, painted white; shutters and doors, dark green. Interior, painted trim; walls, plastered and papered; pine paneling around fireplace and random width pine wainscot in dining room. Oak floors. House contains 31,000 cubic feet. Built in 1928 and cost 32½ cents per cubic foot

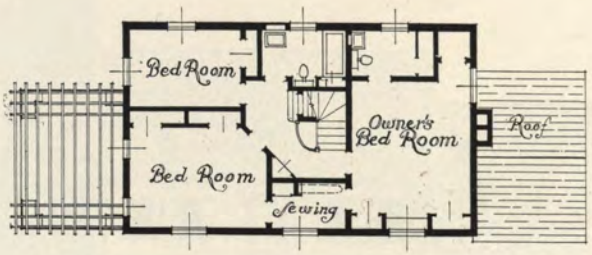
HOUSE OF ALEXANDER W. MILLER, GLENS FALLS, N. Y.

MILTON LEE CRANDELL, ARCHITECT

Front Elevation

Side Elevation





Stonework, buff colored native stone, "broomed" joints of white cement. Second story walls, shingles, white, toned with burnt umber. Roof shingles, pre-stained, weathered gray. Trim, white. Shutters, bottle green. Interior trim, enameled white pine. Walls, plastered and papered. Oak floors. House contains 29,827 cubic feet and cost 40 cents per cubic foot

HOUSE OF B. N. MOSSMAN, KANSAS CITY, MISSOURI

EDWARD BUEHLER DELK, ARCHITECT

American Architect Reference Data

NUMBER FIVE—MAY, 1933

AIR CONDITIONING EQUIPMENT

FOR RESIDENCES AND LIMITED SPACES

AIR conditioning may be defined as "the science of controlling the temperature, humidity, motion and cleanliness of the air within an enclosure." In its broader sense, the term is commonly applied to the practice of simultaneously controlling two or more of the physical or chemical properties of air.

Complete air conditioning would thus embrace heating, cooling, humidifying, dehumidifying, purification (removal of dust, bacteria, odors and toxic fumes), control of CO_2 content, proper ionization, and control of the motion of all air within the enclosure. For practical purposes, however, ionization or deionization of air (its electrical properties) and control of CO_2 content are commonly neglected.

Partial air conditioning may represent any combination of two or more factors, such as heating and humidifying, cooling and dehumidifying, or combinations of these with air motion and air cleaning.

In the following analysis, emphasis is placed on factors which should affect an architect's selection of air conditioning equipment for residences and limited spaces in larger buildings.

THREE FACTORS IN COMFORT

TEMPERATURE, humidity and motion of air are three factors that are intimately related one to another in producing comfort. Their interrelationships have been experimentally determined to develop a "comfort zone" as shown in Fig. 1. The term "effective temperature" has been coined to express the combinations of all three factors at which the body may experience the same sense or feeling of warmth. Within a restricted comfort zone lie combinations which are healthful and enjoyable as well as at the proper temperature level.

If any one of these three factors is omitted, the affect upon comfort produced by the other two is marked. For example, a relatively high temperature combined with high humidity in still air (as on a sultry summer day) produces discomfort, but if the air is set in vigorous motion without changing either temperature or moisture content, occupants will feel cooler due to the increased rate of evaporation of perspiration.

Air motion has a cooling effect upon the body. It is also important in heating as an aid in securing uniformity in the distribution of heat. Temperature and humidity are inversely related within certain limits; that is, comfort is maintained as temperatures rise by a drop in relative humidity and vice versa. Thus a cooling effect may be produced by lowering the dry bulb temperature, or by lowering the humidity within limits. However, below 46° F. in still air an increase in humidity produces a cooler sensation.

FACTORS CONTRIBUTING TO HEALTH

ALL three elements affecting comfort have important physiological effects. Medical authorities place particular stress upon humidification during the heating season as a means of protection against colds, pulmonary diseases and infections of the mucous membranes. To these must be added air cleanliness, resulting from the removal of dust and bacteria. This factor is of year around importance, contributing to the relief of hay fever and asthmatic affections in summer seasons and minimizing the presence of disease bearing dust and bacteria.

OBJECTIVES OF AIR CONDITIONING

WITH this preface the optimum conditions to be sought through air conditioning may be established. The following standards are condensed from findings published by the American Society of Heating and Ventilating Engineers, and from other sources:

1. *Relative Humidity* should be maintained at all times between a minimum of 30% and a maximum of 60%. During the heating season condensation on windows and cold walls puts a practical limit on relative humidity. When the outdoor temperature is 25° F. condensation will occur on single glass with an indoor relative humidity as low as 30% and on double glazing with a relative humidity of about 63%. Some condensation must be anticipated in severe weather in any event. A practical winter maximum relative humidity is around 30% to 45%, and a day to day variation between these ratios is neither serious nor harmful.

2. *Effective Temperature* should be maintained in winter between 64° and 69° E. T., and in summer between 69° and 73° E. T. See Comfort Zone, Fig. 1. The optimum comfort lines are at 66° E. T. for winter (determined by 97% of subjects tested) and 71° E. T. for summer conditions (favored by 98% of subjects tested).

3. *Dry Bulb Temperature* is not alone a criterion of comfort, but long experience and established habit have set the optimum indoor winter temperature at 68° to 72° F. with the usual average at 70° F. From the comfort chart it will be observed that 70° F. and 50% relative humidity produce 66° E. T., the winter comfort line, with air movement or turbulence of 15 to 25 feet per minute.

4. *Summer Cooling and Dehumidification.* Because the human body experiences a sense of shock when passing from very warm air into cooled spaces, experience

has shown it is best to adjust summer cooling and dehumidification to prevailing outdoor conditions. The following table gives the recommended practice.

ACCEPTABLE INDOOR TEMPERATURES IN SUMMER CORRESPONDING TO OUTDOOR TEMPERATURES

Degrees Outside	Degrees Inside		
			Effective
Dry Bulb	*Dry Bulb*	*Wet Bulb*	*Temperature*
95	80.0*	65.2	73.4
90	78.0*	64.5	72.2
85	76.5	64.0	71.1
80	75.0	63.5	70.2
75	73.5	63.0	69.3
70	72.0	62.5	68.2

*Where occupants of cooled space pass frequently to outdoor temperatures, a maximum differential of 8° to 10° dry bulb is recommended by some authorities.

5. *Air Motion.* Authorities are in disagreement as to the optimum rate of air movement. The A.S.H.V.E. recommends a maximum velocity of 50 feet per minute. But a proposed optimum rate of 20 to 30 linear feet per minute is impractical in dwellings and small spaces. It seems better to adopt volume as a guide and here authorities vary between 10 and 30 cubic feet per minute per person (based on maximum number frequently present). A predominance of opinion seems to favor the following: 15 to 20 c. f. m. per person in dwellings, small offices, school classrooms and small assembly rooms and halls; and 20 to 30 c. f. m. per person in large offices, dining rooms, stores serving food, etc. Where more than moderate smoking occurs, there should be positive removal of air to the extent of 10 to 20 c. f. m. per person in addition to the recirculation of washed or filtered air.

6. *Air Purity* should be such that the air is always free of toxic gas and relatively free from odors and dust. Not less than 10 c. f. m. per person should be taken from outside sources (either by controlled ventilation or air infiltration or both). Normally the infiltration of air around doors and windows exceeds this requirement. The use of ultra-violet radiation and the ionization of air are both steps toward air purity that may develop in the future.

7. *Automatic Control.* The factors involved in improving comfort and health through air conditioning are so involved and inter-related that precise manual control of the contributing elements is almost impossible. Since air motion can be established at a constant rate—being determined by the physical proportions of the space to be conditioned, and for the frequent maximum number of occupants—and since air cleaning is directly associated with the mechanics of producing air motion, the principal variables are temperature and humidity. However, some devices establish air motion only when there is a call for heat or humidity, or both. Others are designed to provide humidification according to the call for heat, without regard to the prevailing humidity of the outdoor air. The maintenance of *ideal* conditions requires the automatic integration of heating, humidification and air motion, in such manner as to accommodate the inevitable variations out-of-doors. Similarly in summer, cooling, dehumidification and air motion should be automatically related, but here it is also desirable to scale them in relation to outside conditions to avoid excessive temperature differences.

When selecting air conditioning equipment, therefore, definite consideration should be given to methods of controlling the various functions performed. In some units, automatic regulation within satisfactory limits is inherent in the design; others should be controlled by thermostats and hygrostats.

ENGINEERING CONSIDERATIONS INVOLVED

UP to this point the objectives of air conditioning have been analyzed to provide architects with means of appraising the relative value of different types of equipment in terms of the results desired. It may be assumed that architects will generally rely upon experienced engineering counsel for such matters. The necessary data and method of procedure in estimating required capacities may be found in the Heating and Ventilating Guide of the A. S. H. V. E. for 1933; Air Conditioning Engineers' Handbook (published by The Aerologist Publishing Co., Inc., Chicago); in "Air Conditioning for Comfort" by Samuel R. Lewis (published by Engineering Publications, Inc., Chicago); and in other sources, including manufacturers' technical reference literature.

The data required by an engineer for a complete computation indicates the variety of factors involved. A condensed list for both summer and winter calculations includes:

Minimum and maximum outdoor temperatures and coincident relative humidities frequently occurring (from local weather records).

Indoor winter temperature desired and indoor summer temperature differential desired.

Temperature differentials between space conditioned and all bounding areas of walls, floors, ceilings, glass.

Dimensions of rooms, windows and door openings.

Construction of each bounding surface to determine rate of heat transfer.

Exposure of glass and roof to sun to determine sun effect, and to prevailing winds for wind effect.

Tightness of doors and windows to determine infiltration.

Artificial ventilation, if any, to establish rate of air changes.

Number of occupants—the frequent maximum.

Electric load (watts) for lighting, power, heating.

Complete data on all other heat-producing equipment, including steam and water pipes, direct radiation, gas appliances, etc.

Because of the complexity of the factors involved few manufacturers attempt to guarantee performance of their equipment except under specified conditions.

BASIC TYPES OF EQUIPMENT EMPLOYED

TO produce these various effects upon air in enclosed spaces there are many different types of equipment commercially available. Space does not permit their individual description, due to the great number of models offered for various purposes. It is more to the point to

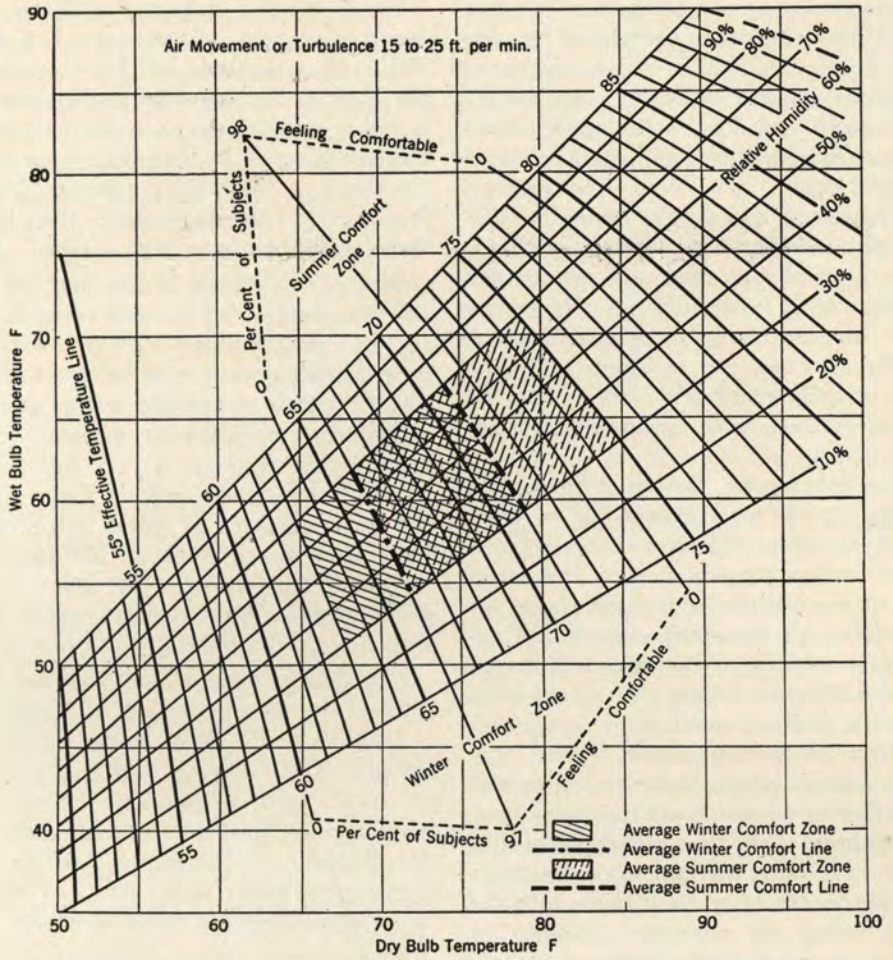


Figure 1. Comfort chart developed at the A.S.H.V.E. Laboratory showing the average summer and winter comfort zones superimposed. This chart is for air velocities of 15 to 25 feet per minute (still air) and is limited in its application as follows: To inhabitants of the United States only. Winter comfort line limited to rooms heated by central station systems of the convection type; it does not apply to rooms heated by radiant methods. Summer comfort line is applicable only to homes, offices, etc., where occupants become fully adapted to artificial air conditions; not applicable to theatres, department stores and the like where the exposure is less than three hours. Copyright by the American Society of Heating and Ventilating Engineers

analyze the characteristics of the relatively few principles employed in the design of such equipment, thereby establishing a sound foundation upon which comparisons can be based and proper selections made.

All apparatus offered on the market performs two or more functions of complete air conditioning. In the following discussion individual functions are analyzed, it being understood that various combinations are used.

METHODS OF PRODUCING AIR MOTION

AIR may be kept in motion by gravity or by mechanical means. Gravity circulation depends upon temperature differentials and the presence of localized spots of high or low temperatures. If such loci are not present (such as a hot radiator or a cooling cabinet) air will stratify in levels with the coldest strata at the floor. The vertical differences of temperature thus produced are uncomfortable and injurious to health. The velocity and volume of air set in motion by radiators, convectors, furnaces and room coolers (not equipped with fans) is thus variable and is not subject to accurate control.

Mechanical methods employing fans or blowers are widely employed because the volume, velocity and direction of air movement can be readily controlled. Open fans may be used where there is little or no static pressure to overcome; blowers or centrifugal fans where static pressure is present in ducts, filters, washers, etc.

In selecting equipment involving fans or blowers important considerations are silence of operation, velocity at discharge, volume moved, power consumed, and location of intake and discharge grilles.

METHODS OF CLEANING AIR

AIR may be cleaned by filtering or washing. There are two basic types of filters in use: dry filters and wet or viscous filters. Dry filters rely upon entrapping dust in the fine interstices of the filtering media, which may be cloth, cellulose, felt, glasswool, etc. They are cleaned or reconditioned by a vacuum cleaner, by shaking out the loose dust, by washing and drying in the case of cloth filters, or by periodic replacement of filter packs. They do not affect temperatures or humidity of the air.

Wet or viscous filters rely upon impingement of dust particles on adhesive surfaces, usually produced by wetting a permanent filtering material such as steel wool with a suitable viscous liquid. Much importance attaches to the liquid employed, for if the liquid evaporates it may be deposited upon glass and other surfaces within the conditioned space. The fluid recommended by the filter manufacturer should always be used. Viscous filters employed in domestic and other small air conditioning units are usually cleaned and re-activated by washing periodically with fresh fluid. For larger installations automatic viscous filters are available which are self-cleaning. In all cases the resistance of filters, which is built up by accumulations of dirt, must be allowed for in computing the flow of air and the capacity of fan or blower units.

Air Washers clean the air by passing it through a fine spray, by passing it over wet surfaces, or by passing it both through a spray and over wet surfaces. Usually the desire to prevent the emission of free water into the air results in the use of "eliminator plates" or baffles immediately following the spray chamber. Consequently a combination of spray cleaning and wet surface cleaning is employed in the majority of air washers.

The production of a finely divided spray introduces design problems which are met in several ways. One method is to employ relatively high water pressures and small orifices. Another is to use lower pressures and larger orifices with impact plates or other mechanical means of breaking up the water stream. Both methods seek to provide the maximum of water contact with the air passing through, using the minimum quantity of water. Consideration should be given to the cost, pressure and character of the water locally available. Water carrying dirt or silt may clog the fine screens and small orifices of high pressure units; water with soluble salts may encrust spray nozzles or baffle plates; cost of water may warrant the selection of units using the minimum quantities, while limited pressure at the apparatus may occasionally be a determining factor.

As air cleaning devices, washers are generally considered advantageous over filters because they remove odors and soluble gases which filters may not; while filters possess the advantage of arresting certain sooty and greasy dust particles (such as flue dust, carbons, etc.) which are not soluble in water and may not be so effectively removed by washing.

METHODS OF HUMIDIFICATION

BEFORE considering the methods employed in humidifying air it is important to appreciate the significance of two factors. First, that relatively large quantities of water must be evaporated in the average dwelling during severe winter weather, in order to approximate optimum conditions. For example, to maintain a relative humidity of 40% in a typical 8-room house of 25,000 cubic feet volume requires the evaporation of about 8 pounds of water per hour under the following conditions: outside temperature 15° F. and relative humidity 50%; inside temperature 70° F.; one complete air change per hour. Obviously manually filled water vessels would require that some person carry 128 pounds of water to the units during the 16 hours of daytime and evening—a task onerous and neglected.

Secondly, the evaporation of water requires the absorption of heat. Every pound of water evaporated at 70° F. absorbs about 1,053 Btu, or a total of 8,424 Btus per hour in the example just given. The heat required is either withdrawn from the surrounding air which is thereby lowered in temperature or it must be added to the water by the heating system. Naturally evaporation is slower at low temperatures than high, requiring more spray water or evaporating surface.

Methods of humidifying air fall into four groups. (1) Evaporation of warmed water in trays, pans, or wet surfaces usually aided by widely extended capillary surfaces with vigorous circulation of air in large volumes. (2) By water sprays and wetted eliminator plates, typified by the customary air washer. (3) By atomizing or spraying the water in a very fine mist directly into the air to be moistened, relying upon direct evaporation of the small particles of water to prevent the presence of free or entrained water in the conditioned space. (4) By the direct emission of steam—a system employed principally in large steam heated buildings equipped with indirect ventilating systems.

Evaporating type humidifiers depend for their effectiveness on the application of heat and on the relation of the area of the water-wetted surface in relation to the amount of air moving over it. Providing they have a maximum capacity equal to the heaviest demand, their humidifying effect can be regulated by (a) change in temperatures (b) change in area of water surface (or by stopping water flow) and (c) by change in volume of air contacting the water surfaces.

Typical units in this group are (1) warm air furnace humidifying devices installed in the bonnet of the furnace, which is the point of maximum heat and air flow; (2) trays and pans employed in conjunction with steam or hot water radiators and convectors—preferably equipped with piped water supply; (3) radiators or convectors with means of causing films of water to flow over extended hot surfaces; and (4) trays or pans having extended evaporating surfaces wetted by capillary action, usually employed with radiators or convectors. Unless evaporating type humidifiers are equipped with fans or blowers or distributing ducts, it is considered better practice to install several units of smaller capacity in various parts of the conditioned space than one unit of large capacity.

Spray type humidifiers reach very high efficiencies. The ordinary air washer shows about 70% efficiency while those designed to function as humidifiers operate at 95 to 98% efficiency. The moisture content of air is usually changed when it is passed through water sprays or over wet surfaces. Both the dry and wet bulb temperatures tend to approach the temperature of the water. If the spray water on leaving the washer is colder than the dew-point temperature of the entering air, the air is dehumidified; while if the water is warmer than the dew-point temperature of the air the latter absorbs moisture, or is humidified. Unless the spray-water carries enough heat units to offset the heat absorbed by evaporation, a cooling effect is produced, requiring the use of tempering heaters in conjunction with the humidifier during the heating season.

Typical units include (1) various types of air wash-

ers; (2) spray heads mounted in vertical sections of the cold air intake of warm air furnaces; and (3) small spray cabinets for wall or floor mounting through which air flow is induced by the force of the spray itself.

Atomizing type humidifiers include several forms: (1) Water may be forced through a very small orifice under pressure, producing a fine mist that may be emitted directly into the space to be treated. (2) Water may be atomized by compressed air, as in an ordinary perfume or medical atomizer. (3) It may mechanically be broken up into a mist by centrifugal force by means of rapidly revolving discs or similar devices. All of these types are primarily for industrial or heavy duty applications. However, fine sprays designed for humidification without air washing are sometimes employed in conditioning units.

METHODS OF DEHUMIDIFYING AIR

THREE methods are used for removing excess moisture from the air as a phase of summer comfort. They are: (1) *Adsorption* of water vapor by hygroscopic materials such as Silica Gel; (2) *Condensation* of water from air by cooling it below its dew-point by passing it over refrigerating coils or other cold surfaces, including ice; and (3) *Condensation* by cold water sprays.

The adsorption method has many industrial applications. The operating principle involves passing the moist air over the surface of an hygroscopic material until the latter has adsorbed its capacity. The air is then redirected to another adsorbing chamber while the first batch of hygroscopic material is reactivated by the application of heat, which drives off the water adsorbed. The cycles are governed automatically. When water vapor is thus adsorbed, the latent heat of evaporation is released; thus warming the air to the same degree that evaporation produces a cooling effect. In summer-comfort applications it becomes necessary to cool the dry air after it has thus been dehumidified.

The condensing methods are generally employed, with the majority of units employing cold water sprays rather than refrigerated surfaces. The apparatus used is identical with humidifying air washers, except that cold water is used in the sprays instead of warm and more water is employed. When city water or artesian well water is available at temperatures below 50° F. it can usually be employed without further cooling by ice or mechanical refrigeration.

Otherwise the water must be cooled before use in the sprays. One method employs ice, either immersed in a reservoir or tank, through which the spray water is recirculated, or in a cabinet where the ice is melted by spraying water over it or passing the water through tubes immersed in crushed ice. Another method uses mechanical refrigeration to chill the spray water. A third is a combination of the two, in which a mechanical refrigerating unit of moderate capacity builds up a reserve of ice when the dehumidifying load is light (as at night). When the cooling demand is heavy both the ice and the machine are drawn upon.

Direct condensation on chilled surfaces is also employed. The simplest example is the circulation of cold water through the radiators or convectors of a steam or hot water heating system. The condensate, of course, must be collected in a drip pan and drained to a sewer. It is not considered good practice to place the evaporators of a mechanical refrigerator directly in the air stream or even in the spray water, except in small units where limited quantities of refrigerant are employed. Hence, the general custom is to circulate brine or cold water through the dehumidifying coils or heat exchangers.

Units employed for dehumidification are almost always elements of cooling devices, humidifiers, or complete air conditioning equipment, only one or two being made solely for air drying with the exception of Silica Gel and other adsorption systems.

METHODS OF COOLING

COOLING for comfort purposes may be accomplished in the following ways: (1) By air circulation only; (2) By evaporation of water; (3) By refrigeration, including artesian or natural cold water, ice melting, mechanical refrigeration and combinations of these.

Air Motion, as previously noted, produces a *cooling effect* without actual change in temperature. It merely increases the rate of evaporation of body moisture, cooling the skin. In practical application, any device maintaining appreciable air motion during warm weather contributes to comfort; thus conditioning equipment having fans or blowers of suitable capacity may act as comfort-coolers by operating the fans only. An exhaust fan removing warm air from the ceilings of rooms and discharging through the roof makes an effective contribution to summer comfort for the average house.

Cooling by Evaporation (based on the principle of adiabatic saturation) employs water sprays such as are found in air washers and spray humidifiers with water at a temperature close to the wet-bulb temperature of the air. The latent heat of evaporation is drawn from the air rather than from the spray water (see Methods of Humidification), causing a corresponding drop in dry bulb air temperature with an increase in relative humidity. The cooling effect thus produced contributes to comfort when the entering air is relatively dry, preferably 30% or lower; it is ineffective at high relative humidities. In practice, this method of cooling is limited in application to very dry climates, as elsewhere the resultant high humidities would be intolerable.

Cooling by Refrigeration transfers the heat of the air to a cooling medium either by cold water sprays or by passing the air over cold metal surfaces. The more intimate contact of air with spray water gives this method an advantage over convection surfaces, though both are widely used in small air conditioners. The methods of cooling referred to under Dehumidification are employed; namely, (1) artesian or natural cold water (preferably under 55° F.) (2) melting ice (3) mechanical refrigeration for direct air cooling or for pre-cooling water, and (4) a combination of ice making and melting with mechanical refrigeration.

Except for the refrigerating machines employed (see American Architect Reference Data on Mechanical Refrigerating Equipment, November, 1932) air cooling devices are identical with equipment already described. Air washers become coolers if supplied with cold water. More water must be used than for mere cleaning or dehumidification, and air should be circulated at a lower

rate. The cooling and dehumidifying capacity of an air washer is thus lower than its air moistening capacity; hence for equal comfort summer and winter it may be necessary to install auxiliary coolers or washers that are not employed during the heating season. All types of heating radiators and convectors may be used as coolers by circulating cold water through them instead of steam or hot water; but in such event they must be equipped with condensation drains, and they should be provided with fans or blowers.

Typical equipment includes (1) Portable or stationary ice cabinets usually equipped with fans for forced circulation and with recirculating water sprayed over the ice or piped through cracked ice. (2) All types of air washers and humidifiers equipped to circulate cold or refrigerated water. (3) Cooling cabinets, either portable or stationary, equipped with direct expansion coils or chambers, connected with the high and low sides of a refrigerating machine. (4) Cooling cabinets or complete air conditioners containing heat transfer surfaces through which cold water is circulated from a remote refrigerating machine, ice melting chamber or a combination of both.

COMBINATION DEVICES

AS noted earlier, the equipment commercially available always performs two or more functions of complete air conditioning, one of which may be heating. Typical combinations are (1) heating and humidifying; (2) the same plus air circulation, air cleaning, or both; (3) cooling and dehumidifying, with or without air circulation and cleaning; (4) humidifying and air circulation, with or without cleaning; (5) heating, humidifying, cooling and dehumidifying, usually with both air circulation and cleaning for substantially complete air conditioning.

AUTOMATIC CONTROLS

AUTOMATIC operation of air conditioning devices is desirable and is readily achieved. If the units are not inherently self regulating, special controls may be used. Thermostats are available in many forms for precise control of temperature. They may govern the temperature of rooms, zones or complete buildings and may control the various stages of air conditioning by maintaining the required temperature of tempering heaters, spray water, reheating coils or individual radiators.

Humidity may be similarly controlled by devices variously called humidostats, hygrostats, or psychrostats. Air motion may be controlled by pressure regulators governing the fan or blower, or by automatic damper controls. Combination thermostats and hygrostats having their own small circulating fan to maintain constant air motion over the sensitive elements are also available for integrated control of temperature and humidity.

Both pneumatic and electric control systems and devices are available. Electric systems are differentiated by the use of standard line voltages or low voltages and by the use of open contact switches or mercury switches.

EFFECT OF AIR CONDITIONING ON BUILDING DESIGN

WHILE air conditioning equipment can be installed in existing or new buildings without any material effect upon the structure or its appearance, the most satisfactory and economical results can be achieved by giving due consideration to the following design factors:

Insulation of conditioned space. Heat losses through walls, floors, and ceilings are important in the computation of both heating and cooling requirements. Thorough insulation of the conditioned space or the entire building results in marked installation and operating economies.

Infiltration through walls and openings. While it is not essential to stop all infiltration (if it were possible to do so) it is desirable to reduce excessive infiltration by caulking and weather-stripping all doors and windows or by installing winter windows and doors, or both.

Condensation on glass and cold walls may prove troublesome in buildings that are properly humidified. Double glazing of all windows is advocated. One means available consists of two sheets of glass separated ⅛" to ¼" by a suitable gasket and hermetically sealed in extremely dry air to form a unit that can be set in ordinary sash. Winter windows produce similar results in minimizing condensation. Condensation gutters may be installed on all windows.

Heating Equipment should be selected in relation to the air conditioning results desired. While any type of heating plant may be used with appropriate conditioning equipment, important economies may result if both the generation and distribution of heat are studied in relation to present and future requirements for humidification, dehumidification, cooling, air circulation and air cleaning.

Water Supply and Drains. Where unit conditioners are to be installed in one or more parts of the living space, water supply should be provided for humidification, with drains to care for any overflow and for condensate produced by dehumidification. Similarly for central units in the basement.

Electrical Connections. Provision should be made in the wiring plans for power circuits to all fans or blowers required immediately or in the future, and for control circuits to thermostats, hygrostats or humidostats and to electrically operated valves and dampers. Pneumatic control systems require comparable circuits of air piping.

Insulation of Cooling Lines. All pipes and ducts carrying cold refrigerants, cold water, brine or cooled air should be thoroughly insulated to prevent damage from condensation as well as to minimize unwanted absorption of heat.

Space requirements include provision of space for ducts, pipes, etc. (with insulating covers where required), refrigerating units, ice storage or ice melting cabinets or tanks where used, air washers, filters and all other conditioning units of the type selected. Adequate headroom should be provided where basement duct installations are contemplated.

The foregoing analysis has been prepared in consultation with recognized authorities on air conditioning. Sources include the American Society of Heating and Ventilating Engineers' Guide and the technical data prepared by manufacturers and aerologists.

The Readers Have a Word to Say

• PROS AND CONS OF THE INTERNATIONAL STYLE

Editor, AMERICAN ARCHITECT:

In his article entitled "The International Style Lacks the Essence of Great Arichitect," which appeared in the January issue of the AMERICAN ARCHITECT, Talbot Faulkner Hamlin proves conclusively that he is an eclectic and the mouthpiece of eclecticism. But he does not prove anything about the International Style. . . .

I fail utterly to see in what measure M. Le Corbusier's attitude towards Greek architecture proves that the International Style lacks the essence of great architecture. Le Corbusier is not an eclectic; therefore . . . he may derive the inspiration of austerity from the work of Iktinos and yet not copy, adapt, or debase it. It seems quite obvious that a man may admire the spirit of an architectural epoch without subscribing to its every detail or undertaking to reproduce that detail upon the least provocation. In his criticism of Le Corbusier's praise of the Greek, Mr. Hamlin proves himself to be so steeped in the heady liquor of eclecticism that he completely confounds the spirit of architecture with the copying of long-dead architectonic forms.

The debt which the cause of modern architecture owes to Henry-Russell Hitchcock, Jr. is great, for he has done more than any other man to chronicle its early struggles and to disseminate accurate, impartial information concerning its rise. But this debt is not so binding that the International Style will fall because some opinion of his does not meet with some other critic's approval. . . . Any one is free to take issue with Mr. Hitchcock on any of his statements concerning the relationship of Gothic to modern architecture, but such academic discussions, be they ever so nicely illustrated with details of a Functionalized Gothic, are surely not full-blown indictments of an architecture.

" . . . *We may conclude, I believe, that the essence of the philosophy of the International Style is its insistence on strict functionalism.* . . . "

A more erroneous conclusion it would be difficult to reach. An insistence upon strict functionalism and an insistence upon a fundamental relation to function are two entirely different matters which the author seems to have confused completely. The clearest exposition of the relationship which the strict functionalists bear to the International Style as a whole is that of Messrs. Hitchcock and Johnson. (The International Style: Architecture Since 1922, by Henry-Russell Hitchcock, Jr. and Philip Johnson, New York, 1932, p. 35 ff.) Modern architecture is rightly insistent upon function as the motivating force in design and any architecture which proceeds upon any other principle is not architecture at all; it is eclecticism. Why a rational relation of architecture to function should disqualify the International Style as great architecture is not clear; for how can any building which is not specifically designed to fulfill the requirements of its purpose come under even the most inexact definition of arcihtecture?

" . . . *It is interested primarily in economy, efficiency, and bareness.* . . . "

It is fair to assume that, in the opinion of the author, the International Style fails to rise to the heights of truly great architecture because of the stated reasons. Conversely, then, it must hold that the author believes great architecture may be characterized by wastefulness, inefficiency, and a profusion of applied decoration (designed, it is to be supposed, to cover up its essential lack of proportion).

The International Style can by no stretch of imagination conform to an eclectic ideal which disassociates architecture from function and which does not stand squarely for economy, efficiency, and the elimination of archetypal claptrap.

" . . . *He (the layman) likes to have the feeling that things 'work.' But it's a qualitative, not a quantitative interest. And it is true of both Greek and Gothic architectures that they appeal to this 'qualitative' and not 'quantitative' kind of thought. The layman can make them his own. And this is distinctly not true of the International Style, which aims most definitely at the other ideal.* . . . "

How is Talbot Faulkner Hamlin, A. I. A. and the author of *The Enjoyment of Architecture* able to speak for the layman? As an architect and an architectural writer, can he with honesty pose as the mouthpiece of a laity which has probably never heard of the International Style? Indeed, he analyzes feelings which the American layman cannot possibly have; for how many examples of the new architecture are there in this country for the layman to see and to criticize? How many of the laity have seen the important European examples of the new style? Such delicately shaded asthetic problems as whether the International Style possesses nebulous qualitative or quantitative virtues do not cloud the brow of any layman of my acquaintance. But even if they did, what of it? Can the opinion of the man in the street, begotten in ignorance and endowed with inert conservatism, be a valid reason for claiming that the qualities of greatness are lacking in an evolving architecture? How can a laity, ignorant of the great architecture of the past and oblivious to the architectonic sterility of the present, have any opinion concerning an emerging architectural manner? To ascribe an aesthetic evaluation of the International Style to the layman is preposterous and to present his adverse reactions to it as a proof that it lacks the essence of greatness is absurd.

Ill-chosen as are the arguments with which I have already dealt, they represent the epitome of logic when compared with Mr. Hamlin's fatuous finale, *"Can it*

be that the International Style has never learned how to play?" As a telling argument levelled against a struggling architectural movement, could any question be more inane? Is it seriously suggested that, to be truly great, an architecture must play? Play at what? At what did the great architectural phases of the past play? How did the Romanesque play? How does an architecture play . . . ?

Mr. Hamlin's article is damaging to the cause of modern architecture, not because he is able to support his thesis that "The International Style Lacks the Essence of Great Architecture," but because he obfuscates the main issue with irrelevant academic sideshows and with a patent ignorance of just what the characteristics of the new style really are. . . . He makes no comparison between the spirit of the architecture of the past and the spirit of the new movement, but concerns himself solely with such trivialities as the brandishing of a decorative Gothic rib over the head of Mr. Hitchcock. The complete eclectic, he sees the absence of arbitrary ornament as bareness and feels that the elimination of decorative clichés from the designer's vocabulary constitutes an unprecedented restriction of architectural potentialities. . . .

In direct refutation of Mr. Hamlin's thesis, I declare that the International Style is the first architectural manifestation with any claims to greatness which has appeared over an empty aesthetic horizon in more than a hundred years. Not merely the result of the new structural systems initiated by steel and reinforced concrete, it is the declaration of a new spirit in architecture, which is the direct descendant of the great architectural epochs of the past.

Because it aims to solve contemporary problems in terms of contemporary technical achievement, with the same sincerity of purpose which has characterized all great architecture, the International Style is truly *traditional,* and therefore in direct opposition to the copybook archaeology of the eclectics. Because of its inherent traditionalism, the International Style holds great promise of developing into an architecture worthy in every way of its great historical precursors.—*Hamilton Beatty, Architect, Madison, Wisconsin.*

Editor, AMERICAN ARCHITECT:

The argument of Mr. Talbot Faulkner Hamlin, A. I. A. in his January article "The International Style Lacks the Essence of Great Architecture" is, to me, not very conclusive. I think the author makes the mistake of comparing the earliest beginnings of a "New Style" of barely ten years existence with the finest creations of the Great Styles which have been arrived at after several hundred years of architectural development.

We have had too much "playing" with architecture and too little of learning how to work structurally.—*Harry Bogner, Architect, Milwaukee, Wisconsin.*

• MR. HAMLIN REPLIES . . .

Editor, AMERICAN ARCHITECT:

Mr. Beatty's letter about my article in the January issue demands at least a brief rejoinder, if only to ask that he reread what I wrote. Nowhere, it seems to me, have I supported eclecticism; nowhere implied that past forms should be copied today. My effort was merely to examine carefully the underlying spirit of various architectures of the past which have been cited by supporters of the International Style, and to compare them with that of the International Style itself. And to find explicit statements with regard to that particular style of modern architecture I turned, naturally enough, to the writings of its chief supporters. It was they, not I, who chose the Greek and Gothic styles as sanctions.

Perhaps Le Corbusier did not really feel the enthusiastic admiration for the spirit of Greek architecture which I find so clearly stated. I chose to believe his admiration sincere, so I set to work to examine this Greek work from the functional point of view, which Le Corbusier also admires. I can only find these two attitudes absolutely at odds. You can have your admiration of Greek architecture, or you can have your doctrine of the building as a machine. But you can't use the former to support the latter, and lay any claim to logical consistency. And the same is true of Mr. Hitchcock and the Gothic.

With regard to my statement about "economy, efficiency, and bareness," I can only repeat my belief, the result of much historical study, that little great architecture has ever resulted from those three factors. The Greek Temple was not economical; it was vastly expensive in labor and wasteful in material. St. Peter's in Rome is a most inefficient church. And Amiens is perhaps, bare? I deplore "archetypal claptrap" as much as Mr. Beatty; I merely hazard the opinion that until the International Style has developed a vivid, humane approach it is useless to apply superlatives to it. A building, as Le Corbusier himself states, becomes architecture only when it transcends the mere facts of economy and efficiency.

I believe, despite Mr. Beatty's eloquence, that I must still stand by my "fatuous finale," I believe that all fine art is the result of the "something more than enough," some exuberance of reaction or emotion that demands more than the merely necessary. And I know that this excess is action or feeling for its own sake—not social, not ethical, not "efficient"—in other words "play." An adult, divine, play. As for the existence of this quality in the great architecture of the past, I can only, in all humility, ask Mr. Beatty to examine it again. And especially the Romanesque he cites—is it not full of play? Sometimes savage, even sadistic play, often crude, almost always neurotic, but still play? It played with stepped arches, with sculpture, with tower and campanile forms, with vaults, chapels and apses, with polychrome masonry, with vivid and at times even obscene grotesquerie—held back, inhibited by lack of skill in masonry technique, it yet struggled always, towards exuberant "play." Perhaps this creative exuberance is beyond the power of our tired and disillusioned civilization. Then, by all means, let us give up any claims to any art whatsoever. But I do not believe so; the creative spirit is still alive. And for witness I shall only cite—among much else—the work of Mendelssohn, of Thomas Tait, the black glass Daily Express Building in London, the recent work of Peter Behrens, of Brinkman and van der Vlugt, of Dudok, and of Frank Lloyd Wright.—*Talbot Faulkner Hamlin, A. I. A., New York City.*

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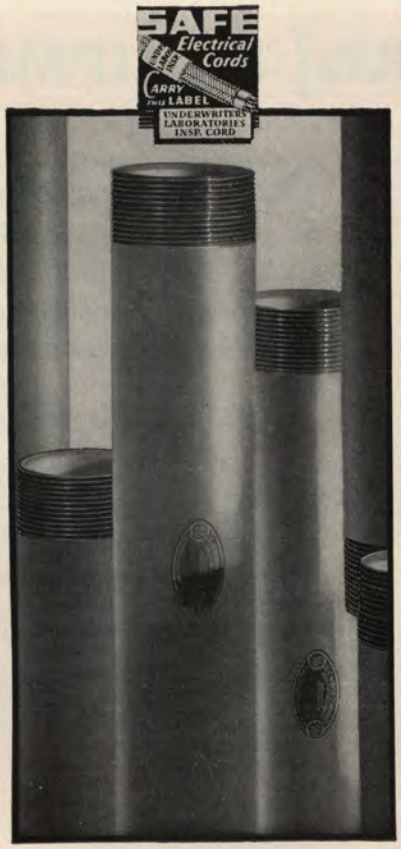

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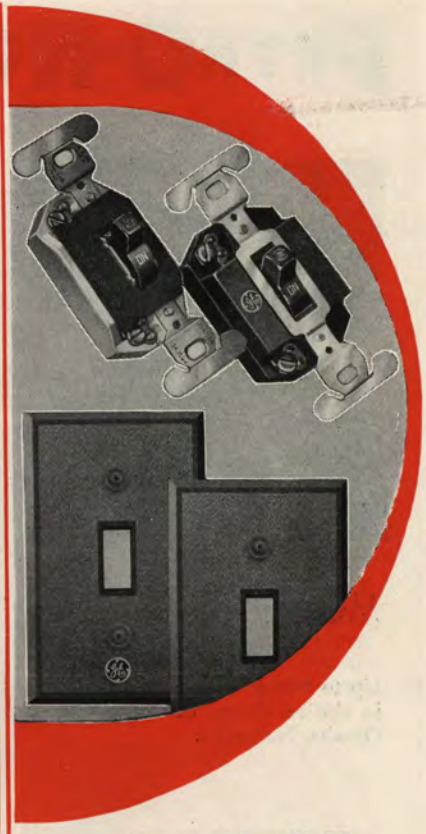

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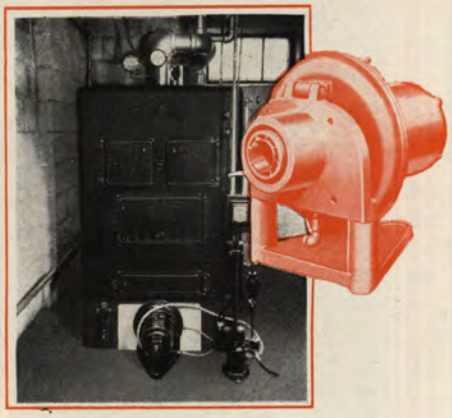

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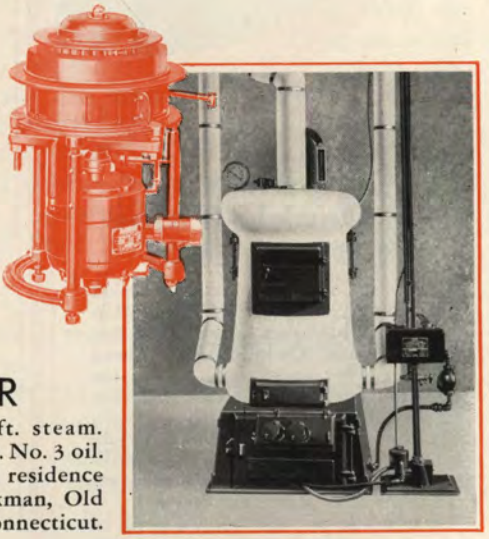

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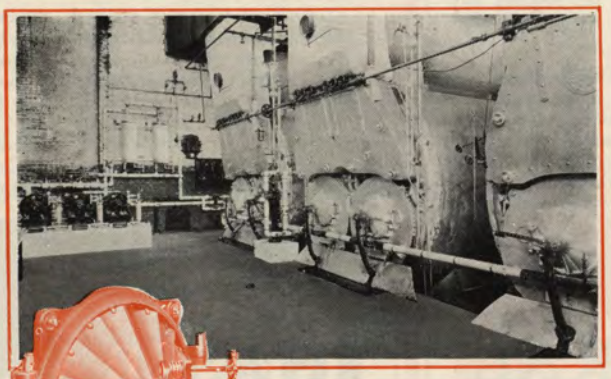

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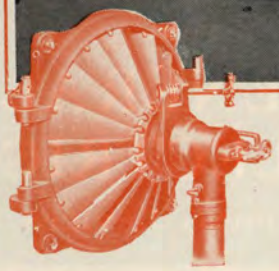

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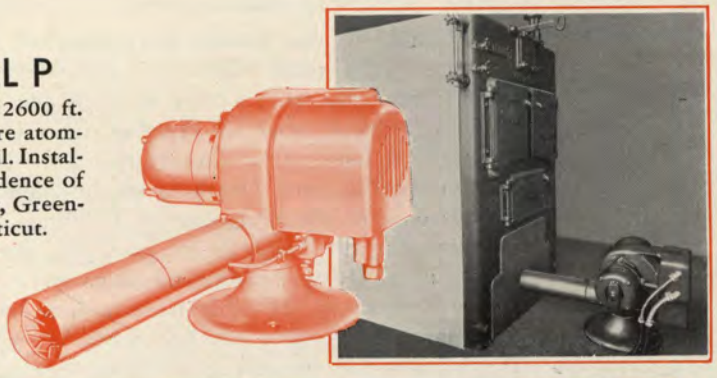

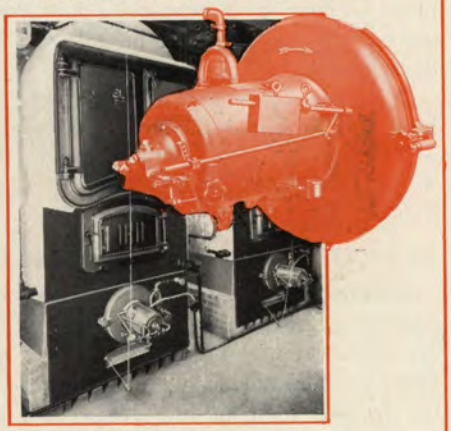

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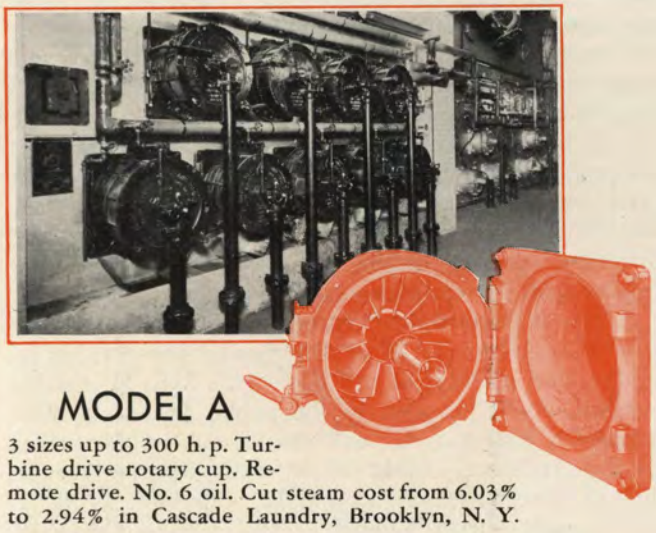

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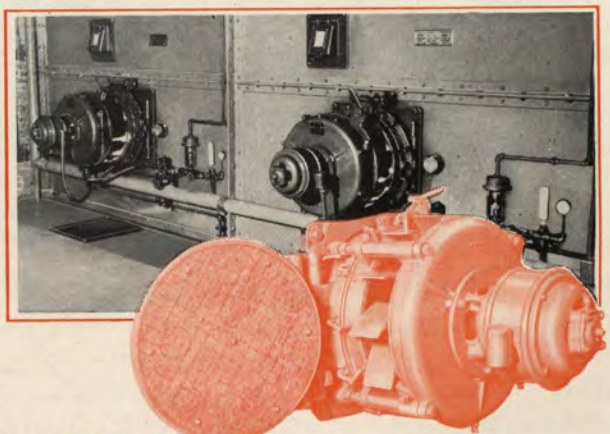

MODEL B

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• FACING REALITIES

Editor, AMERICAN ARCHITECT:

I read your editorial on realities with interest. It is certainly true that the real estate and building businesses are in a tough way, although as fast as buildings seem to get liquidated conditions seem to improve a little.

Of course, the most serious thing of all is that real estate is carrying a staggering burden of taxation for no reason at all except that it is an easy thing to tax. In ordinary times the tax on real estate may be spread out and passed on to tenants who in turn pass it on through their various business activities. But when times are bad, real estate makes a poor thing to tax.

You are certainly right about the mass-production houses. The people who build these houses should tell the public what some of these sample houses actually cost, and then the public would realize that these companies have a long way to go before they can produce a house for $2,000 or $3,000. I think the public should be made to realize that there is very little opportunity for saving in the shell of a house anyway, and that is the direction in which all these big companies seem to be working.

The cost of a small house has been coming more and more to consist of equipment and the main reason that the cost of equipment is high is due to the high cost of distribution.

This mass-production idea is the bunk for a long, long time.—*Royal Barry Wills, Architect, Boston.*

• PROFESSOR NEWCOMB THINKS WE ARE RIGHT

Editor, AMERICAN ARCHITECT:

I have read with great interest your editorial on the student of architecture in the March issue of AMERICAN ARCHITECT. I think you have exactly the correct view in the matter. I have no fear about the better trained men finding places for themselves in the world. . . .

A well-rounded architectural curriculum forms an adequate background for several lines of endeavor other than the practice of architecture. Many of our graduates are in evaluation work, construction industries, advertising, real estate development, materials and equipment salesmanship, building materials manufacture, building management, art printing, etc.

The student is *not* feeling sorry for himself. Most of them are happy that their preparation has been broad enough to insure a wider outlet for their activities than training in most professions affords.—*Rexford Newcomb, Dean, Department of Architecture, University of Illinois.*

• MR. LEE THINKS WE ARE WRONG

Editor, AMERICAN ACHITECT:

The situation in the building business . . . is black. There is no reason to paint it dirty white, gray or pink. I don't mean that AMERICAN ARCHITECT has done that, but there is one article in the March issue that is certainly out of place—the one entitled "Let's Send More Students To Our Schools of Architecture." . . .

The schools of architecture in this country are to a large extent in as many difficulties as many business organizations . . . and some of them will have to stop or at least lie fallow for some time. That period may be two years, five years, ten years. The architectural schools need a dictator as much as anything else. . . .

Public work has always been a large, and perhaps the best, part of an architect's practice. In Pennsylvania, Governor Pinchot says that 600,000 families are sustained by relief money. . . . They will require $120,000,000 from public funds, and no one may deny that this will stop the greater part of public building work in Pennsylvania. . . . In view of this item alone the editorial is wrong, without consideration of the question of a readjustment of building tradesmen's wages or any number of others.

It is my belief that a new deal will have to be made in the schools of architecture. This is not the time to send more students to school—for the good of the schools' main object, which should be the students.—*Edward B. Lee, Architect, Pittsburg, Pa.*

• PRELIMINARY SKETCHES

Editor, AMERICAN ARCHITECT:

Referring to the article "Ownership of Preliminary Sketches" by Clinton Blake in the January 1933 issue, the architect has no business to bribe the owner, with free preliminary work of sketches, in order to get the commission later. It is known that two different men will invent the same invention at the same time. This also is true in the designing of buildings. Of course, the unfortunate fellow who loses his sketch, always insists blindly that the finished plans were copied from his preliminaries. There is nothing new or mysterious in the designing of a building when the conditions of the lot and the owners requirements are known. Two individuals will produce the same layout.—*Jules G. Koppel, Los Angeles, California.*

• CHICAGO ARCHITECTURAL EXHIBITION

Editor, AMERICAN ARCHITECT:

Many of your readers will be interested in the ninth annual exhibition of the Chicago Architectural Exhibition League which is to be held June 1 to August 1 at the Architects' Club of Chicago. As the show will open coincidently with the Century of Progress Exposition we expect an unusually large attendance.

The exhibition is to be illustrative of the present trend in architecture and the allied arts. The scope of the show has been broadened to include conceptions of all modern problems, particularly in the field of housing, recreational and industrial projects, in their preliminary or final stages. For this purpose exhibits may be in the form of sketches, models, photographs, drawings, prints, etchings, lithographs, cuts, water colors, paintings or other examples of art.

Entry slips must be returned by May 12; exhibits will be received May 15 to 20 inclusive; the opening reception and press view will take place May 31 and the exhibition will be open to the public June 1 without admission charge. All exhibits should be forwarded to the Architects' Club, 1801 South Prairie Avenue, and all correspondence should be addressed to me at 4717 Beacon Street, Chicago.—*Louis Pirola, President, Chicago Architectural Exhibition League.*

NEW CATALOGS . . .

Readers of AMERICAN ARCHITECT may secure without cost any or all of the manufacturers' catalogs described on this and the following page by mailing the prepaid post card printed below after writing the numbers of the catalogs wanted. Distribution of catalogs to draftsmen and students is optional with the manufacturers

BREWERY TANKS

243 . . . A 12-page booklet issued by The Glascote Company, Inc., Euclid, Ohio, describes a line of glass-lined metal brewery tanks and gives diagrams and tables of dimensions for each type.

FITZGIBBONS OIL-EIGHTY BOILER

244 . . . The Fitzgibbons Boiler Co., Inc., has issued a new 8-page pamphlet descriptive of a new steel boiler for residences giving dimensions, data and diagrams. A.I.A. File No. 30-C-1.

MOVABLE STEEL PARTITIONS

245 . . . A comprehensive 20-page booklet with an 8-page insert on the various types of steel movable partitions manufacturerd by E. F. Hauserman Co. In addition to general descriptions of the products much detailed information is given regarding sizes and construction.

SHEET STEEL PILING

246 . . . A 32-page technical bulletin designed as an insert for the Carnegie Steel Company's manual on steel sheet piling. It contains condensed translations from foreign authors on methods of determining bending moments and earth pressures and is issued by the Carnegie Steel Company, Pittsburgh, Pa.

KLIEGL SPOTLIGHTS

247 . . . A catalog of 28-pages has been issued by Kliegl Bros., Universal Electric Stage Lighting Co., Inc. It illustrates and describes a wide variety of spotlights and includes prices as well as data on sizes and capacities.

LINOLEUM FLOORS FOR PUBLIC BUILDINGS

248 . . . In a profusely illustrated brochure of 36 pages the Armstrong Cork Co., Lancaster, Pa., offers many suggestions regarding the use of linoleum on the floors of public buildings, including shops, restaurants and offices. Many of the illustrations are in full color and a feature of the booklet is a section devoted to color reproductions of many special types and patterns of linoleum. Included also are hints on the maintenance of the surface of linoleum floors.

ALUNDUM CERAMIC TILE

249 . . . A 4-page folder issued by the Norton Co., Worcester, Mass., and designated as Catalog "B," gives data and specifications for Alundum Ceramic Mosaic Tile, a non-slip product. A.I.A. File No. 23-a-1.

FIREPROOF VAULT DOORS

250 . . . The York Safe and Lock Co., York, Pa., has issued a loose-leaf folder that gives detailed information on vaults and vault doors. In addition to specifications many of the sheets contain detailed drawings of typical installations. A.I.A. File No. 18-G.

BAKELITE

251 . . . In an attractively printed brochure of 51 pages the Bakelite Corp. presents the story of the manufacture and uses of Bakelite Laminated. Set forth in detail are the properties of the material and many of its architectural, industrial and commercial applications. Among the many illustrations is a series of color plates.

WAYNE OIL BURNER

252 . . . An 8-page folder offered by the Wayne Oil Burner Corp., Fort Wayne, Indiana, describes three of the company's models and lists the necessary data for their application to many boilers of standard manufacture.

IDEAL OIL-BURNING BOILER

253 . . . In a 16-page brochure, containing many illustrations in full color, The American Radiator Co. describes the De Luxe Model No. 12 Oil-Burning Boiler. The information included is remarkably complete and covers dimensions, capacities and performance data for both steam and water boilers.

CASWELL TARGET CARRIER

254 . . . The Caswell Shooting Equipment Co., Anoka, Minnesota, presents an 8-page, loose-leaf pamphlet descriptive of the installation of Caswell Target Carriers and including illustrations of standard details. Included also are diagrams indicating suggested details for the construction of indoor rifle and pistol ranges.

SYNCRO-FIT METAL PARTITIONS

255 . . . A comprehensive 12-page booklet has been issued by The Mills Company, Cleveland, Ohio, describing the new Syncro-Fit Metal Partitioning method recently announced by the company. The bulletin is well illustrated with photographs and detail drawings that explain the structural features of the method and suggest a variety of combinations of standard parts. In addition to information on office partitions, the booklet also describes the Mills Metal line of toilet and shower partitions, unit showers and hospital cubicles. A.I.A. File No. 28-A-3.

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Gypsum Floor and Roof Slabs

256 . . . A 4-page folder issued by the United States Gypsum Company, Chicago, includes a concise, detailed description Red-Top-Rib Slab, a steel-and-gypsum floor and roof slab particularly adaptable to low cost steel frame construction. The details of construction have been ingeniously arranged to show the successive steps necessary in the field erection of the slabs. A.I.A. File No. 4-E-52.

Cold Storage Doors

257 . . . Bulletin No. 106 has recently been issued by the Jamison Cold Storage Door Co., Hagerstown, Md., to describe their Super-Freezer doors, used to seal rooms where sub-zero temperatures are essential. The bulletin covers also the hardware used in connection with the doors and includes suggestions for the proper installation of the company's products.

Floodlighting Equipment

258 . . . A 52-page publication on floodlighting equipment has recently been issued by Westinghouse Electric and Manufacturing Co., Cleveland, Ohio. Designated as Catalog 219-C, the booklet contains an unusually complete exposition of floodlighting methods. Many installations are illustrated together with a photograph and description of every type of floodlighting equipment manufactured by Westinghouse. Prices for many of the items are listed. Underwater floodlighting units and mobile color equipment are also included. One portion of the publication deals with methods for calculating floodlighting installations. A.I.A. File No. 31-F-24.

Ice and Frost

259 . . . Architects who have not seen Bulletin No. 402-A issued by the Frick Company, Waynesboro, Pa., will be interested in the readable description it contains of Kold-Kan refrigeration. In the 8-page pamphlet data are given regarding cabinets that require no mechanical methods for refrigeration and a service for them that includes a periodic inspection and the delivery of portable freezing units.

Ideal Magazine Boilers

260 . . . A catalog issued by the American Radiator Company describes and gives complete reference data about the Ideal Magazine Boilers Nos. 15 and 25. Performance data are arranged to assist in the selection of sizes by showing maximum efficiencies for given loads. A.I.A. File No. 30-C-13.

Acoustics and Noise Control

261 . . . The engineering services and facilities offered to architects by the Acoustic Consulting Department, Electrical Research Products, Inc., are described in an interesting 12-page brochure.

New Kewanee Steel Boiler

262 . . . An 8-page folder announces a new Kewanee round steel boiler for coal, oil or gas fuels. These boilers all embody Two-Pass tubes for maximum heat transfer. The folder sets forth complete performance data, dimensions and specifications. A.I.A. File No. 30-C-1.

Detachable Watthour Meters

263 . . . Westinghouse Electric and Manufacturing Co. has issued a bulletin descriptive of its New Type OC detachable watthour meters for outdoor and indoor installations.

"Electrunite" Boiler Tubes

264 . . . Steel and Tubes, Inc., Cleveland, Ohio, a subsidiary of the Republic Steel Corp., has issued a 4-page leaflet describing their new boiler tubes manufactured from steel by electrical resistance welding. Sizes and weights of the tubes are included.

Story of Stairs

265 . . . A 4-page leaflet presented by the J. G. Braun Company, Inc., New York, contains detail drawings and descriptions of several new stair designs that have been added to the company's line of steel and iron products. A.I.A. File No. 14-D or 15-D.

Producer's Council Bulletin

266 . . . The monthly bulletins of the Producer's Council, Inc., contain brief announcements of the various products of the companies that are members of the Council. Bulletin No. 15 describes sheet-copper roofing, stainless pipes and tubes, floor coverings of asphalt tile, garage hardware, circuit breakers, sound-isolating machinery bases, elevator modernization service, bronze screens, and new acoustical products. The bulletins are produced with the cooperation of the Structural Service Division of the A.I.A.

Kawneer Store Fronts

267 . . . A 4-page technical information bulletin issued by the Kawneer Co., Niles, Michigan, describes a new design in the company's line of hollow metal store fronts. Structural units, sizes and accessories are fully shown and detail drawings illustrate typical installation conditions. A.I.A. File No. 26-b-1.

Enduro Stainless Steel

268 . . . In a 16-page brochure, Republic Steel Corporation, Youngstown, Ohio, presents a fund of comprehensive information on architectural applications of Enduro Stainless steel, including its fabrication, properties and shapes and finishes available. The brochure includes the results of collaboration with leading architects and engineers who have specified Enduro in important building projects. Bulletin ADV. 217.

(Note: *This item, appearing in the March issue of* American Architect *under the number* 238, *erroneously named the Enduro brochure as Bulletin* 217-B. *Its correct designation is Bulletin ADV.* 217.)

AMERICAN ARCHITECT

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NEW YORK, N. Y.

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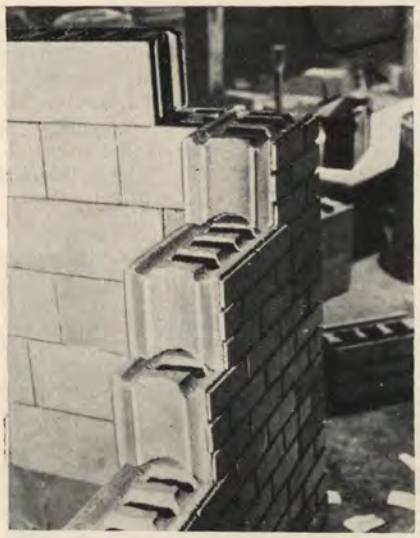
57th Street at Eighth Avenue
New York, N. Y.

New Materials and Equipment

BRIEF REVIEWS OF MANUFACTURERS' ANNOUNCEMENTS
TO KEEP THE ARCHITECT INFORMED OF NEW PRODUCTS

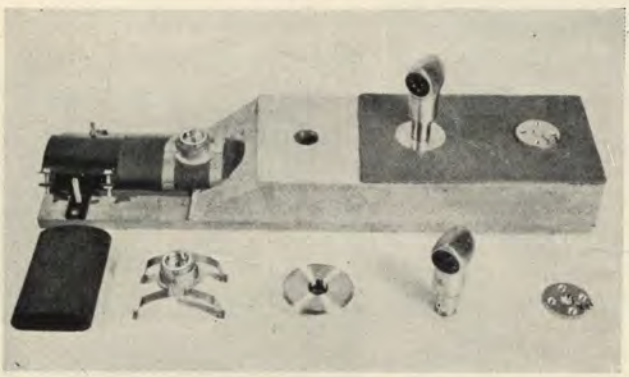
Surfaced Concrete Block

185M The National Facade Corp., 730 Park Building, Pittsburgh, Pa., has perfected an interlocking concrete block, faced on one side with brick, stone or smooth concrete. The facing material is imbedded in the block with a dovetail and the blocks themselves are cast with a tongue and groove construction that assures a natural bed in laying and a tight joint on both sides of the wall. Units are cast with vertical air spaces and the interlocking feature produces horizontal air spaces in the wall, both of which are aids to the natural insulating value of the material. A saving in first cost of from 20 to 65 per cent is claimed by the manufacturers, depending upon the type of construction and location. The units will be distributed under license from the National Facade Corporation.



G. E. "Prelokaylet"

186M General Electric Co. has perfected a new device that permits the quick efficient location of telephone or lighting outlets with a minimum of effort. The device, called "Prelokaylet," consists of a covered wire outlet that is clamped onto the duct at the factory at any desired interval. When the floor is poured the top of the outlet forms a screed for the surface and may be left flush and exposed or covered with the finished surface. In the latter case, an accessory device locates the center of the Prelokaylet by means of magnetized pointers. The top of the device unscrews and installation of standard wire outlets can be made neatly and economically.



New Line of Frigidaires

187M The Frigidaire Corporation of Dayton, Ohio, has recently announced a line of electric refrigerators that embody several new principles of mechanical design. The compressor unit consists of a newly developed 1/20th h.p. rotary motor using air circulation for cooling and is said to consume no more current than an ordinary electric light bulb. The cabinets are of steel and due to the size of the new compressor are somewhat smaller than the older models of similar capacities.

All-Weather Waterproofing

188M Surface waterproofing of the transparent type has formerly required application only on thoroughly dry walls and at temperatures above 45 or 50 degrees F., thus making it difficult to waterproof a building during the fall, winter and spring. To overcome this condition, The Master Builders Co., of Cleveland, Ohio, has developed a new type of transparent material which can be applied to either wet or dry surfaces at any temperature above 32 degrees F. The product, called "All-Weather Masterseal," is said to possess a high waterproofing efficiency so that only one coat is usually necessary for a satisfactory treatment.

Steel Folding Chair

189M A new enamel-finish steel folding chair, suitable for institutional, commercial and general public seating requirements has been placed on the market by the Howell Company, Geneva, Illinois.

Aluminum Air Filter

190M As one unit of the air conditioning equipment for building interiors, air filters play an important part. Located at the intake of ducts used for heating and ventilating, they are being increasingly used to exclude atmospheric dust which is harmful either to individuals or manufacturing processes. What is said to be the first air filter made entirely from aluminum is now being manufactured by the Independent Air Filter Co., Chicago. The material was chosen for its lightness and relative resistance to ordinary forms of corrosion.

Thermostat for Water Vapor

191M A low voltage, duct type thermostat which may be used under exposure to water vapor has been recently introduced by Barber-Colman Co., Rockford, Ill. All exposed parts are made of phosphor bronze except the sensitive element which is of bimetal. Models are available in the standard ranges.

New Metal Screen Cloth

192M The International Nickel Co., Inc., 67 Wall St., New York, has perfected an alloy called "Inconel" which, in the form of wire, possesses a strength, resistance to corrosion and to discoloration that makes it particularly applicable for use as a screen cloth. Inconel screen cloth is about the color of Monel Metal, is proof against leaching, and though somewhat higher in price than other similar materials, is said to offer almost complete resistance to ordinary forms of deterioration. The screen cloth is manufactured by The C. O. Jelliff Mfg. Corp., Southport, Conn.

Metal Access Doors

193M To meet the need for a fireproof access door, inconspicuous, inexpensive and sturdy, the Milcor Steel Co. of Milwaukee, Wis., has developed a metal access door which is now available in five sizes at prices that range from $3.50 to $10. The doors are made of heavy gauge steel and the corners of the housing are lapped and spotwelded to form rigid, non-warping joints. Expansion wings of expanded metal are furnished with the doors if desired.

Du Pont Marbleized Pyralin

194M A new development in pyroxylin plastic which duplicates the appearance of marble has been announced by E. I. Du Pont De Nemours & Co., Inc., of Wilmington, Del. The product, known as Marbleized Pyralin, involves a patented process whereby a photographic likeness of a marble slab is transferred to a sheet of transparent Pyralin. The sheet is then laminated between two pieces of glass by means of heat and pressure. The finished product looks like quarried marble. It is available in several usual marble colors or in any of the rarer marble colors and grains. The material, which is to be sold by the square foot, will be marketed by the Indestructo Glass Corp. of New York.

Reversible Ventilating Fans

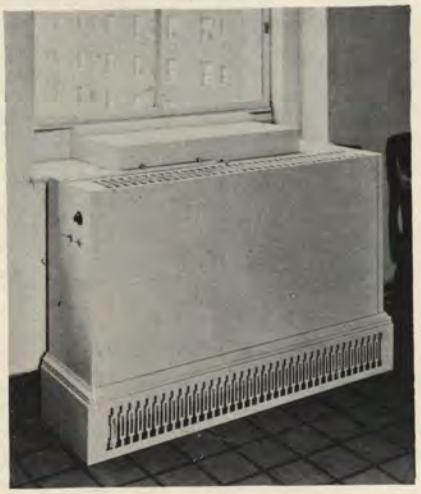
195M A completely redesigned line of ventilating fans for home kitchens is offered by The Emerson Electric Mfg. Company, St. Louis. Of the three sizes, 9″, 12″ and 16″, the first two are dual purpose, electrically reversible fans that will remove hot air and smoke from kitchens during meal times and draw in fresh air at other times. Adjustable wall boxes for permanent mounting are provided separately; also mounting panels for window and transom installations.

House Sprinkler System

196M A fire protection system of low cost, suitable for basement installations in small buildings is announced by Globe Sprinkler Co., Philadelphia. Named the Globe Home Saveall Sprinkler System, it employs a new chemical salt fusing element, a combined automatic alarm and drain valve and Cop-R-Loy pipes with malleable fittings. Connection is to the regular water supply. The alarm valve is placed n any desired location. When a sprinkler head operates. or when the valve is tampered with, the alarm rings.

New Air Conditioning Unit

197M General Electric Co. and Campbell Metal Window Co., a subsidiary of American Radiator & Standard Sanitary Corp., have jointly developed a new air conditioning unit. The installation circulates and filters outside air and eliminates exterior noises by the use of a Maxim Silencing device. It has been designed for individual spaces and will cool and dehumidify in summer and automatically regulate heat and humidification in winter. The unit will be distributed by General Electric Co. and Campbell Metal Window Co.



Extended Use of Plywood

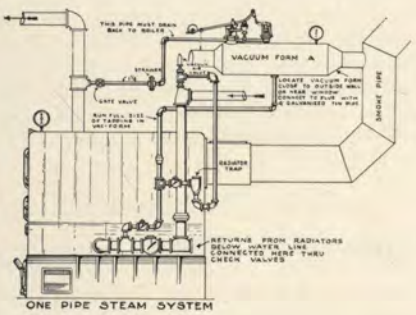
198M Haskelite Manufacturing Corp., of Chicago, has perfected a method of steaming and boiling plywood panels so that they may be bent in any direction around a comparatively short radius. After the panel has dried the fibers of the plywood assume a permanent set. The panels can be fabricated and prefinished at the factory, marked for assembly and erected at the job to conform with almost any desired architectural treatment.

Stainless Steel Tape

199M The Lufkin Rule Co., Saginaw, Michigan, has developed a flexible-rigid 6-foot tape-rule in which stainless steel is used not only for the blade of the rule but also for the case. The tape is reeled into a small case under a ratchet control, but is rigid when extended. It is marked in the usual 16ths or in 100ths of a foot for engineers use.

Vacuum Form for Steam Systems

200M The D & T Manufacturing Co. has developed a new automatic vacuum-producing device for steam heating systems called the Vacuum Form which will be distributed by the U. S. Radiator Corp., Detroit. It operates without moving parts due to the vacuum formed when steam is condensed within a closed chamber. Steam entering the vacuum form operates a damper which admits cold air from flues connected to the chimney. Steam condenses, forming a vacuum that draws the air and condensate from the system into the condensing chamber and then to the boiler. With this device it is possible to locate steam radiators below the level of the boiler water.



Pioneer Oil Burner

201M Scott-Newcomb, Inc., St. Louis have added a new low-priced model to their line of oil burners. The Pioneer Model CJ is designed as an "economy burner" for the small and medium size house and will burn from 1½ to 3 gallons of oil per hour—equivalent to 250 to 1000 square feet of steam radiation—using domestic furnace oil Nos. 1, 2, or 3. Mechanical features included: nozzle cut-off valve; stainless steel nozzle; continuous electric ignition; radio interference eliminator; double filtering oil cleaner and silent pump.

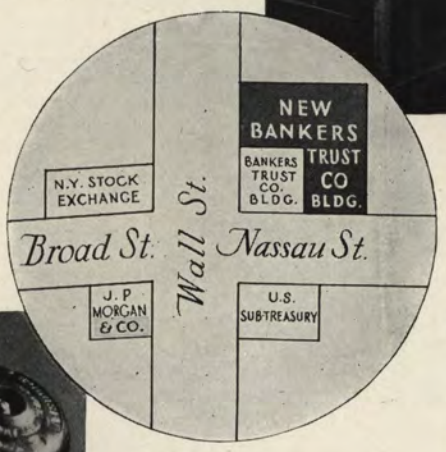
TENANT . . . . . SATISFACTION

After being installed in its new addition, the Modutrol System was selected for the modernization of the original Bankers Trust Company Building . . . .

SIX months after the Modutrol System was installed in the 26-story addition to the Bankers Trust Company Building, New York City, this system of temperature control was selected for the modernization of the original 35-story Bankers Trust Company Building . . . Tenant satisfaction, among other things, depends upon proper temperature control, with resultant health and comfort. And tenant satisfaction means full occupancy . . . Show your building owner client the advantages of temperature control by the Modutrol System.

■

THE BANKERS TRUST COMPANY BUILDING AND ITS NEW ADDITION. Sheve, Lamb & Harmon, New York City, Architects; Meyer, Strong & Jones, Engineers; Baker, Smith & Co., New York City Heating Contractors.



THE MODUSTAT—A self-contained automatic radiator control valve which permits true modulation of direct radiation—a constant and even temperature to meet the individual requirements.

The Modutrol System is easily and economically installed in old or new buildings. Being either self-contained or electrically controlled, there are no expensive installation costs in buildings already constructed. The fuel saving effected by this accurate and positive system of control, plus tenant satisfaction, enables the Modutrol System to pay for itself in a remarkably short period . . . Only the Modutrol System means true modulation . . . Minneapolis-Honeywell Regulator Company, 2738 Fourth Avenue South, Minneapolis, Minnesota. Branch offices and distributors in all principal cities.

MINNEAPOLIS-HONEYWELL

Control Systems

. . . Things You Didn't Learn in School . . .

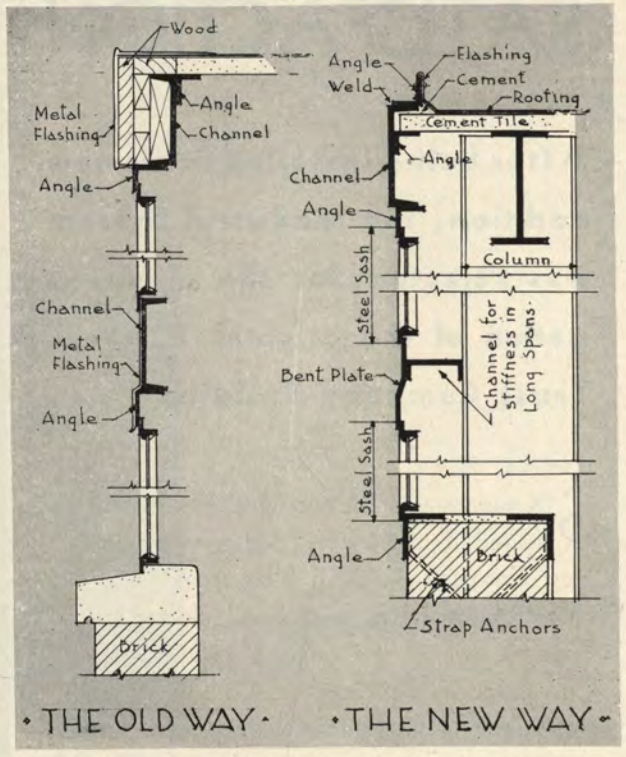
American Architect will pay $5 for each suggestion published on this page

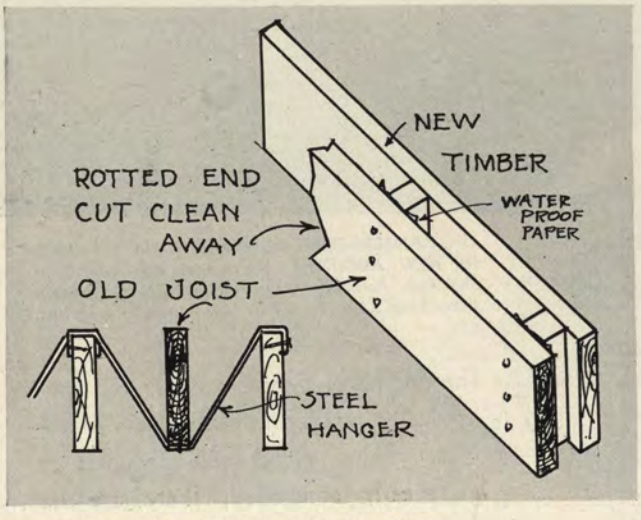
• ELIMINATING METAL FLASHING AT FASCIA

By N. C. Kern
Birmingham, Alabama

A METHOD of simplifying metal flashing and improving the appearance of the exterior of an industrial building is shown in the accompanying detail. Steel buildings in factory construction usually employ stone or cement sills with steel sash fastened to angle iron, and channel supports bolted or riveted to the steel framework. Wood blocking is used at the roof to form a fascia. This type of construction requires flashing at the roof to cover the wood blocking and also at the horizontal mullions. Since the metal flashing of copper or zinc is rather thin, there results a wavy surface across the face. The stone or cement sills are often chipped and broken.

Metal flashing at the fascia can be eliminated by using the channel and angle assembly shown in the drawing. Flashing at horizontal mullions is eliminated by employing a bent plate. Exterior sills are eliminated, and the masonry work is protected by heavy angles anchored as indicated. Where there is a possibility of seepage the joints are welded.

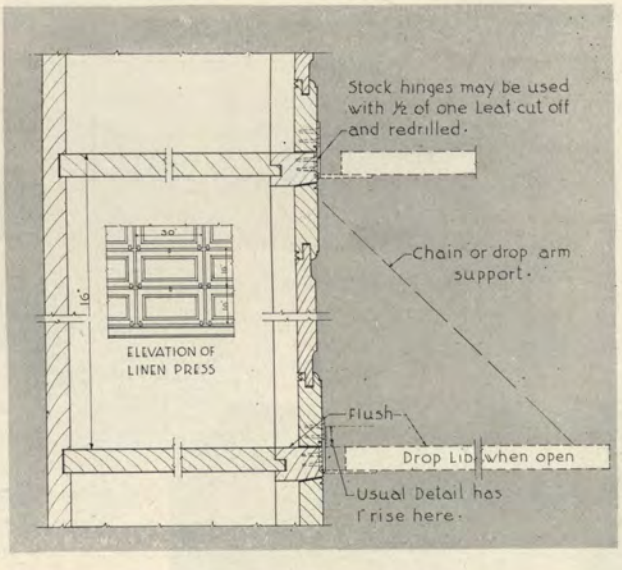




• PREVENTING INFECTION OF STRUCTURAL WOODS

By Ernest O. Brostrom
Kansas City, Missouri

OLD, dry-rotted and fungi-infected timber placed in juxtaposition with new wood will infect the new wood, causing relatively rapid decay. In rehabilitation work, therefore, it is advisable to remove the infected or rotted timbers completely wherever possible. Otherwise, methods similar to those illustrated should be employed to isolate the new members from the old, after removing as much as possible of the decayed wood.


Stock hinges may be used with ½ of one Leaf cut off and redrilled.
Chain or drop arm support.
ELEVATION OF LINEN PRESS
Flush
Drop Lid when open
Usual Detail has 1" rise here.

• CONSTRUCTING LINEN PRESSES

By Eugene V. Barthmaier, A.I.A.
Philadelphia, Pa.

A METHOD used in constructing linen presses is indicated in the accompanying drawing. Note that the drop lids are flush on the front when closed and also flush with shelves when down in horizontal position. Most housekeepers like this arrangement, as the 1-inch bump is eliminated when the lids are down.

Neshobe Gray

—a variety of blue shade Vermont Marble—quarried at West Rutland. It is uniformly marked and well adapted for interior work. The insert shows the Neshobe Gray marble in the United States Post Office, Hartford, Conn., Malmfeldt, Adams & Prentice, architects. It was also used in the Lakeside Hospital, Cleveland, and is now being installed in the First National Bank of New York. • Registered architects are invited to write, on their own stationery, for a copy of *Color Plates of Vermont Marble*, a booklet showing Neshobe Gray and twenty-one other varieties of marble in their actual colors. Address: Vermont Marble Company, Proctor, Vermont.

VERMONT MARBLE

B E A U T I F U L • P R A C T I C A L • D U R A B L E

ARCHITECTURE
ALLIED ARTS

BOOKS

ENGINEERING
BUSINESS

Left, an interior by Oliver Hill, R.I.B.A., from Decorative Art, 1933. Above, Compton Wynyates, Warwickshire, England, from Homes and Gardens of England

DECORATIVE ART, 1933

Edited by C. G. Holme. Published by the Studio Publications, Inc., New York. 140 pages; size 8¼" x 10½"; price in cloth $3.50, in wrappers $2.50

PUBLISHED primarily for designers and craftsmen, the year book gives a remarkably complete review of modern design during the past year. The current volume marks the twenty-eighth year of publication and contains over 200 illustrations in black and white with a few interiors reproduced in natural color. The illustrations are all captioned with clear, concise descriptions of the subject and represent work in America, England and on the Continent. The book has been well arranged to indicate the changing public taste in the fields of architecture and interior decoration. It includes examples of industrial design of furniture, metal, glass and pottery.

FARM AND VILLAGE HOUSING

Edited by John M. Gries and James Ford. Published by The President's Conference on Home Building and Home Ownership, Washington, D. C. Illustrated; indexed; 293 pages; size 6 x 9¼; price $1.15

THIS book is unique in the field of housing literature, since the conditions of rural housing in America have been neglected in the past. Like the other volumes in the series of eleven reports of committees of The President's Conference on Home Building and Home Ownership, this book is comprehensive in its treatment of the subject. There is much of the practical along with the sociological and theoretical; some parts of the book being intended for the farm and rural home owner, and the remainder for the student of housing. Architects will be interested in the discussion of design, construction and improvement of farm homes.

HOMES AND GARDENS OF ENGLAND

By Harry Batsford, Hon. A. R. I. B. A., and Charles Fry. Published by Charles Scribner's Sons, New York. Illustrated; indexed; 175 plates; 60 pages of text; size 6½" x 9¼"; price $3.75

THERE has been no dearth of books published on the famous houses and gardens of England, but few of them are within the economic reach of the majority of individuals today. This volume was compiled as the first of a series which would give an outline, historical text in explanation of many illustrations for a very modest price. The author has made no attempt to include all the material available on his subject; but the illustrations give a representation of each period of English architectural design in their settings of park and garden. One interesting part of the volume is concerned with brief descriptions of the plates and directions as to how the houses may be most easily reached, the latter in conjunction with a diagrammatic map.

COMPOSITION AND RENDERING

By A. Thornton Bishop. Published by John Wiley & Sons, Inc., New York. Illustrated; 128 pages; size 7¼" x 10¾"; price $2.75

AS an architectural renderer A. Thornton Bishop needs no introduction to architects. In this volume he sets forth the essentials of composition and delineation primarily for students. For clarity the text is divided into five parts that include a review of criticisms, notes on the indication of building materials and accessories and comment upon composition in the theater. The illustrations are mostly by the author, although a few reproductions of stage settings are included.

ALUMINUM IN ARCHITECTURE

Published by the Aluminum Company of America, Pittsburgh, Pa. Illustrated; 234 pages; size 5¼" x 8¼"; price $1.00

THE volume is characterized as a handbook by the publishers, but it contains more than is usually included in this type of book; it constitutes a treatise on aluminum for architectural purposes which will undoubtedly be of help in the design and fabrication of aluminum structures. Much general information regarding the commercially available forms of the metal is given; their physical properties are discussed; and the applications of various alloys and shapes to practical problems are noted. One part of the handbook is concerned with the practices employed in fabricating and erecting aluminum members, another gives information on finishes and maintenance. The book contains charts, diagrams and tables.

ELECTRIC WIRING FOR LIGHTING AND POWER INSTALLATIONS

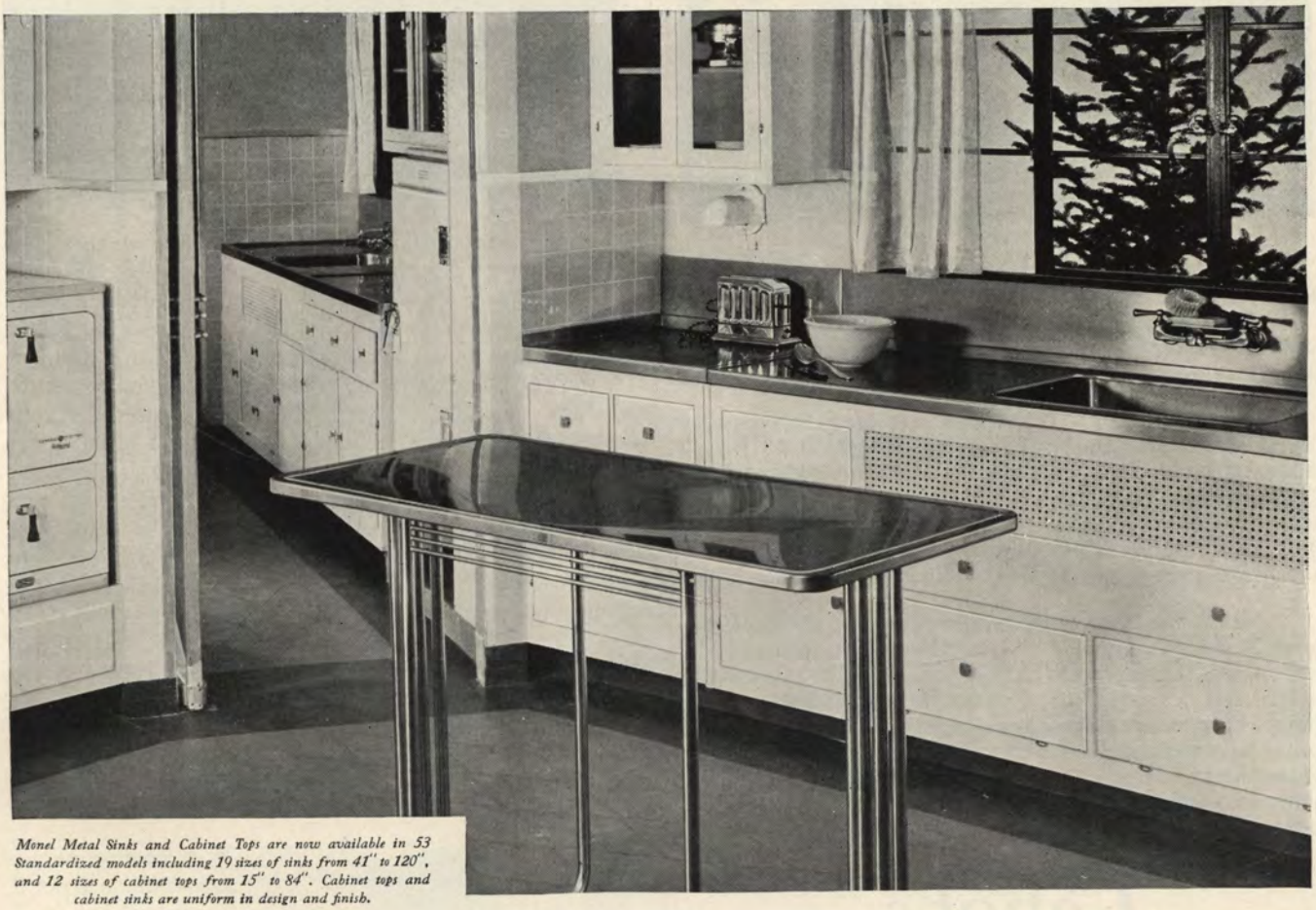
By Arthur L. Cook. Published by John Wiley & Sons, Inc., New York. Illustrated; 453 pages; size 4½" x 7¼"; price $3.00

A TEXT BOOK written for a student of a particular trade is not always of value or even interest to architects. This volume, however, (the revised third edition of Interior Wiring and Systems for Electric Light and Power Service) contains much information on all types of electrical installations that an architect will undoubtedly find useful in the development of specifications and in the supervision of field installations. The three parts deal with lighting, power and interior wiring and include discussions of equipment, installation and methods of calculation. The volume contains also an appendix with many charts and practical tabular data.

WHEN YOU DESIGN A

Modern Kitchen

consider MATERIAL *as well as plan*



Monel Metal Sinks and Cabinet Tops are now available in 53 Standardized models including 19 sizes of sinks from 41" to 120", and 12 sizes of cabinet tops from 15" to 84". Cabinet tops and cabinet sinks are uniform in design and finish.

● In designing a modern, scientifically planned kitchen, working with the elements of space, layout, traffic, lighting, and service units to be installed, keep in mind the versatility of Monel Metal:

Remember its usefulness in providing uninterrupted and continuous working areas, over cupboards and cabinet tops.

Make provision for its employment as trim, for example, as framing around flush panels in ceilings.

Count on its decorative value, as well as its utility, when employed as back splashers, kick plates, push plates, range tops and refrigerator trim.

Of course, you are familiar with the inherent qualities of Monel Metal: its immunity to rust, its resistance to corrosion, its easy cleanability, and its enduring silvery beauty... qualities that have won an enviable place for Monel Metal in the modern kitchen.

Have you leafed over a late catalog of the *Standardized* INCO units—"Streamline" Sinks, "Straitline" Sinks, Cabinet Sinks—and the various other standard size tops, backs, etc.?

If you haven't studied this book, if mention of it doesn't call up a visual memory of these various items, we urge you to write today. Ask for the INCO Standardized Catalog (A. I. A. File No. 29 H 6).

• • •

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

MONEL METAL

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET NEW YORK, N. Y.

This Beautiful House won a *House Beautiful* AWARD

House in Knoxville, Tennessee. Architects, Baumann & Baumann, Knoxville. Painted with Cabot's Old Virginia White and Cabot's Green Gloss Collopakes.

THIS house in Knoxville, Tennessee, won Honorable Mention in the *House Beautiful* 1931 Small-Home Competition. The shingles and trim are painted with Cabot's Old Virginia White and the blinds with Cabot's Gloss Collopakes in non-fading blue-green.

Cabot's Collopakes, new scientific colors for every paint use, give a beautiful and lasting finish to shingles, brick, stone, stucco or wood. They are made by the patented Cabot Collopaking Process, by which the pigments are not ground but are subdivided to a degree of fineness much greater than is possible with grinding. Collopakes, as a result, have marked advantages over paints made by ordinary grinding methods.

The pigments are carried further into the pores of the material covered, giving far better priming qualities and adhesion, tending to prevent chipping and peeling. The texture is finer and deeper and color values are richer. The painted surface is extremely durable and tough, with long life. Collopakes have tremendous covering power, which makes them economical to use, because fewer coats are needed. They are automatically self-leveling and show no brush marks. *Send the coupon below for full information.*

Cabot's Collopakes
For Every Paint Use

Made by the Makers of Cabot's Creosote Shingle and Wood Stains

Samuel Cabot Inc.
Manufacturing Chemists

141 Milk Street
Boston, Massachusetts

Please send me Collopake Color Cards and full information on Cabot's Collopakes.

Name.....

Address..... AA-5-33

Trends and Topics of the Times

(Continued from page 47)

• According to the report of The President's Research Committee on Social Trends, there were 2,000 architects engaged in professional practice in 1870. But the report says that they " . . . were probably more adequate in number for their task than the 22,000 confronted by the vast scale and diversity of modern construction in 1930." Does this imply that only 220 architects could do all the work available in 1933?

• At A Century of Progress Exposition which opens this summer at Chicago, glass will apparently come into its own. Early in April work was started on a glass "House of Tomorrow," designed by George Fred Keck, architect, and built by an organization called Century Homes, Inc. It is a twelve-sided, steel-framed structure with walls entirely of clear plate glass, shuttered within to provide the privacy that shy persons still insist upon. There are no windows; air conditioning does the trick of ventilation. And there are no partitions or closets; movable wardrobes serve in both capacities. The roof is a terrace to be lived upon and a garage and airplane hangar occupy part of the first floor. Another glass building is being erected by the Owens-Illinois Glass Co. of Toledo, Ohio. The structure, 100 feet long with a central tower 50 feet high, will be constructed entirely of vacuum glass blocks colored in a complete range from red to blue. The walls are not transparent but do admit diffused light, and when lighted the building will present a twinkling glow of shining, shifting color.

• A new synthetic stone, made from a combination of shale, alkaline earths and rock dust, was recently announced as the product of chemical research in the laboratories of a mid-western university. The manufacturing process which includes steam "cooking" and the application of heavy pressures, is believed to be approximately the same as that which produces natural stone. The new product, designated commercially as "Rostone," is a material of close, even texture, about as light as haydite concrete, weatherproof, fire-resistant and non-efflorescent.

The Studio of Architecture and Furnishings

and a Distinguished Jury Composed of Members of

The American Institute of Architects

Will Award Gold Medals
For the Best Work Done In

REMODELING and RENOVATING

June 1933—June 1934

IN KEEPING with the trend toward a positive reconstruction of business and community life, GOOD HOUSEKEEPING announces a definite incentive to home-owners to remodel houses and to renovate interiors.

To show the infinite possibilities of remodeling and renovating, and to stimulate work of this character, Good Housekeeping Studio and a distinguished jury composed of members of The American Institute of Architects will make a national award of two Gold Medals: one to the best remodeled house and one to the best remodeled room or interior, begun and completed between June 1st 1933 and June 1st, 1934, and submitted by an architect or owner, from any section of the country.

FIFTY AWARDS

"Distinguished Mention" and a bronze medal will go to the next best in each of the two classes from each State of the United States. This makes two National Gold Awards and forty-eight Bronze Awards. Duplicate medals will go to both owner and architect of winning material.

As this competition is designed to stimulate remodeling of houses and decorating of interiors, the cost of alteration to a house is not to exceed $5,000; and to a room or interior, $700. There is no minimum limit of cost.

GOOD HOUSEKEEPING reserves the right to show in its pages the prize-winning houses and rooms. The names of those receiving awards will be given, and the locality of each house and interior. Material used will be paid at regular publication rates.

Quite apart from the patriotic contribution such work represents, it is decidedly advantageous to modernize now. Architects were never so eager as they are today to undertake a job—large or small—and good labor and building and decorating material never were so low-priced.

Photographs of actual work will be required; drawing of elevations can not be considered. Awards will be made on the basis of practicality as well as beauty of design. All photographs must be marked with name and address of senders and name and address of owner, if the material is sent by the architect. All written matter must be typewritten.

RULES FOR CONTEST

Entries for this contest will be received from June 1st, 1933 for work begun and completed between June 1st, 1933 and June 1st, 1934.

Contest is open to any architect or individual who may send one or more sets of photographs of house or room before remodeling or renovating, with photographs of completed work; floor plans; cubic contents, full specifications of material used, giving trade names; itemized costs. Five items: 1. Photographs before. 2. Photographs after. 3. Floor plans. 4. Materials employed, with their trade names given. 5. Itemized costs of alteration or renovation.

ANNOUNCEMENT OF AWARDS

Winners of all medals will be announced in the September 1934 issue of GOOD HOUSEKEEPING. The house and the room winning the gold medal will be shown in the November issue. Prize-winning photographs and plans of all houses and rooms will be hung at architectural exhibits throughout the country during the spring of 1934.

The times call for leadership in modest activities as well as in affairs of state. Here is an opportunity for every home owner to respond to the nation's need for enterprise. And the individual gains will be worth while.

The character of the jury, the prestige of GOOD HOUSEKEEPING, the interest the competition will create nationally and locally, will give these citations and awards a value far exceeding their intrinsic nature.

Plan at once your remodeling and renovating for 1933. Consult your architect and builder—and, as soon as the work is completed, send the photographs and date to Good Housekeeping Studio. Unused material will be returned as soon as possible after June 1st, 1934.

Photographs, plans, specifications of materials with trade names and costs shown in the article on the following page are examples of requirements

An illustrated booklet, giving suggestions for remodeling and renovating, with full particulars of the contest will be sent upon request

THE JURY

Frederick Ackerman, F. A. I. A.
Authority on Housing and City Planning

Dwight James Baum, F. A. I. A.
Gold Medalist, Architectural League of N. Y.

Frank Forster, A. I. A.
Twice Silver Medalist, Architectural League of N. Y.

Arthur Loomis Harman, F. A. I. A.
President Architectural League of N. Y.

Helen Koues
Director of Good Housekeeping Studio

Arthur I. Meigs, F. A. I. A.
Gold Medalist, Architectural League of N. Y.

William Graves Perry, A. I. A.
Restoration Work, Williamsburg, Va.

With this announcement to its 1,850,000 readers in its June issue, Good Housekeeping gives greater support than ever before to the cause of the architect and the manufacturer of building material.

GOOD HOUSEKEEPING

Everywoman's Magazine

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• Recent experiments with gray cast iron have shown that the addition of 13 per cent chromium prolongs the life of the metal at least 500 per cent by rendering it relatively immune to the corrosive action of smoke and steam. Manufacture is a simple problem and the higher cost of the chromium cast iron is offset by its longer life in service.

• A conclusive argument for lighting fixtures that are easily cleaned is a statement by Samuel G. Hibben of the Westinghouse Lamp Co. that clean lamps and reflectors save one-third the cost of artificial light. Mr. Hibben said that dirt alone had added about $300,000,000 to the total lighting costs in this country during 1932.

• From a radio broadcast by Mr. J. B. Berryman, President of Crane Co.: " . . . I want to say that if the Federal Government will balance the budget by drastic economies, if that is possible; if the State and Municipal bodies will follow suit, and if all the quack economists are segregated where they can talk themselves to death, the people of this country have brains and courage enough to work out their own salvation within a comparatively short time."

• From a letter written to President Roosevelt by Mr. Lester C. Bush, manager of the Muncie (Indiana) Chamber of Commerce: " . . . revival of the construction industry by means of modernizing, reconditioning and remodeling of homes and other buildings *now* will put more than *four million men and women* at work immediately, not to say anything about the millions indirectly affected, 'behind the lines'. . . . There is a Committee on Reconditioning, Remodeling and Modernizing in the Department of Commerce, of which Mr. C. O. Christenson has been secretary. If Mr. Roper will bring this Committee out of hiding, blow the accumulated dust off their assembled ideas and release their strangulated souls, you will get action and pronto."

• According to Bernard L. Johnson, editor of *American Builder and Building Age.* " . . . the prime reason for building homes is not to sell material or make jobs, but rather to give people places where they can live normal, healthy, happy lives and rear children with safety and economy." It is hard to credit this in the face of the dreary rows of speculative houses that we all know about and in view, also, of the shamefully tangled affairs of the home finance companies. Mr. Johnson made the statement as a chairman of an important committee at the Chicago home-selling conference. It is true so far as the average American family is concerned, for the desire to own a home of our own is inherent in every one of us. Little effort is needed

to *sell* houses. They will be *bought* by the thousands just as soon as properly adjusted standards of house planning, construction and equipment are developed by the building industry and when a more equable system of financing assures the owner of an easier method of acquiring a home and gives him a reasonable security against the loss of it.

• As we go to press a national home-selling conference is being held in Chicago. Leaders in the various branches of the building industry are attending. The purpose is to show what must be done to sell homes now, and the committees hope that two long-range programs will be endorsed by the convention. One concerns the technique of selling homes and the other covers publicity regarding the facts of cost-cutting and technical improvements already accomplished by the individual units of the building industry.

ANNOUNCEMENTS

• The conference on "Re-Engineering for Economical Manufacture," originally scheduled for the latter part of March, will be held in Cleveland at the Case School of Applied Science during the three days of May 10, 11 and 12. Details regarding the subjects of the conference may be obtained from E. S. Ault, Chairman, Case School of Applied Science, Cleveland, Ohio.

• The Twenty-fourth Annual Convention of the American Federation of Arts will be held in the Art Institute, Chicago, June 8, 9 and 10.

• The Annual Conference of British Architects will take place in Cambridge, England, from June 21, to June 24, inclusive.

• A European tour stressing the study of housing and modern architecture is being arranged under the sponsorship of Alpha Alpha Gamma, national architectural sorority. The tour is open to all those interested in architecture and full information may be obtained from The Open Road, 56 West 45th St., New York.

• The Annual Meeting of The Producers' Council will be held on June 27 and 28 at The Architects' Club, 1801 Prairie Ave., Chicago. Because there will be no convention of the American Institute of Architects this year, the dates were arranged to follow Architects' Day at the Century of Progress Exposition in the hope that architectural representatives from various sections of the country will be able to attend also the meetings of the Producers' Council. Details of the Council's plans may be obtained from Harrie H. Sherman, Executive Secretary, 19 West 44th St., New York.

• The Department of Architecture of the College of Fine Arts of New York University announces a competition for a scholarship equal to the tuition for the academic year 1933-34. The scholarship is to be used for graduate work leading to the degree of Master of Architecture and is open to any graduate of an approved school of architecture other than New York University, who is between 22 and 30 years of age and who is a citizen and resident of the United States. The program will be in the form of a design sketch problem and each competitor must work under the supervision of a member of the American Institute of Architects. Applications

MODERNIZE with Acoustical Treatment

Armstrong offers a timely suggestion to architects

•

WITH new construction still below normal, where will building activity come from this year? The answer is—from remodeling—as most architects realize.

Why not combine a rebuilding program with a plan for increased efficiency? Suppose, for instance, that you are called in to remodel an office building, a hospital, or a school. You know that noise is a problem in every public and semi-public building. You can provide a solution by including plans for acoustical treatment. You eliminate unwanted noise and improve hearing conditions . . . and perform a distinct service for your clients.

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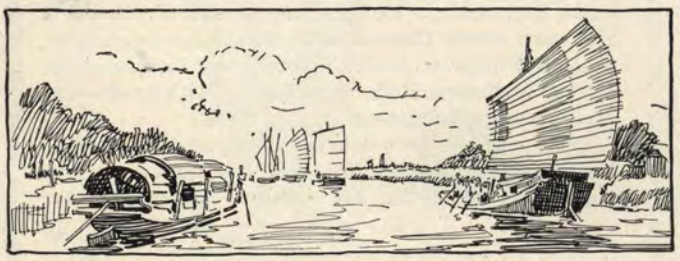

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must be filed on or before June 10, each drawing must be mailed before noon on June 26. Full information regarding the competition and the college course may be obtained by addressing Dean E. R. Bossange, College of Fine Arts, New York University, 250 East 43rd Street, New York.

• Cranbrook Academy of Art, Bloomfield Hills, Michigan, has announced its first annual competition for five scholarships in the Department of Architecture and Design. Though the scholarships are available to both men and women of any age or nationality, applicants must be either graduates of accredited architectural schools, practicing architects or draughtsmen. Registration for the competition must be received at the school before July 15, 1933 for the working year beginning September 11. Inquiries should be addressed to Richard P. Raseman, Executive Secretary, Cranbrook Academy of Art, Bloomfield Hills, Mich.

DEATHS

• John Mills Sawyer, retired, died April 9 at the age of 53. He studied at Harvard and at the Beaux Arts in Paris, had been associated with Clinton & Russell for many years, and for his war service was decorated by the French and Montenegran governments. He retired as architectural advisor to David Lupton's Sons & Co. in 1928.

• William Stanton Robinson died in Cincinnati, Ohio, March 22. He was 68 years old. Mr. Robinson had achieved an international reputation in his profession, having at one time done work for former Kaiser Wilhelm of Germany. He designed the Royal Theater in Cincinnati and was a leading organizer of the Cincinnati Art Club.

• Ernest Robinson Williams died in Seattle, Wash. on March 5th. He studied at Cornell and had lived in Seattle since 1909.

• James Hansen Schack died in Seattle, Wash. on March 16th at the age of 60. He was a native of Denmark and studied architecture in Chicago, establishing a practice in Seattle over thirty years ago.

• Lee H. Miller, Chief Engineer of the American Institute of Steel Construction died at Cleveland, Ohio, on April 9th. He was 56 years old and had been identified with the structural steel industry for over thirty years. Mr. Miller was born and educated in Canada, coming to the United States in 1900. For fourteen years he was the structural sales agent for the Bethlehem Steel Co., and in 1922 he became an active organizer of the American Institute of Steel Construction, serving as the Institute's first managing director. Since 1923 he was that body's chief engineer and did much to bring about better cooperation and higher standards in the structural steel industry.

• Philip H. Bevier died on April 5th at his home in Brooklyn, N. Y. He was 74 years old. Mr. Bevier played an important part in the development of hollow tile construction and for thirty-five years had been a consultant to the National Fireproofing Corporation.

• William Whetten Renwick died at his home in Short Hills, N. J. on March 15th at the age of 68. Mr. Ren-

wick was best known for his work in ecclesiastical design and decoration. He was associated with his uncle, James Renwick, designer of St. Patrick's Cathedral in New York, and later in an independent practice designed many churches throughout the country. He was also a sculptor and painter and developed "fresco-relief," a process in which both sculpture and painting are used. He was a member of the American Institute of Architects and the National Sculpture Society.

• Henry B. Herts died in New York March 25th at the age of 62. He was a specialist in the design of theaters and was regarded as the inventor of the cantiliver arch balcony construction. His work included many of the well-known theatres on Broadway, the Polo Grounds and the Ochs Memorial Chapel at Chattanooga, Tenn. He was at one time a member of the firm of Herts and Tallant.

• Purruccio Vitale, landscape architect, died February 26th in New York at the age of 58. Mr. Vitale was responsible for the designing of many suburban communities and large private estates in the eastern and middle-western states. He had been active in establishing the department of landscape architecture at the American Academy of Rome, and the Foundation for Architecture and Landscape Architecture at Lake Forest, Ill. In 1927 Mr. Vitale was appointed to membership on the National Fine Arts Commission by President Coolidge. He was a Fellow of the American Society of Landscape Architects, and an honorary member of the American Institute of Architects.

PERSONALS

• Oliver Reagan, A. I. A., has announced the opening of his new office at 101 Park Avenue, New York.

• Edward F. Gates and L. Whitney Standish have formed a partnership for the practice of architecture under the firm name of Gates & Standish, National Bank Building, Beverly, Mass. Manufacturers literature and samples are requested.

• The firm of Malkind & Weinstein, architects, formerly at 93 Court St., Brooklyn, N. Y., has been dissolved. Samuel L. Malkind and J. Lewis Meyers have formed the new firm of Malkind & Mayers with offices at 105 Court St., Brooklyn, N. Y.

• John E. Linnett of Boston, Mass., has been appointed as the fourth holder of the James Templeton Kelley Fellowship in Architecture, by the Boston Society.

• Irving K. Pond, of Pond & Pond, Martin & Lloyd, Chicago, has been elected Honorary Corresponding Member of the Royal Institute of British Architects. He is a member of the Central Association of Austrian Architects and the Bund Deutscher Architekten.

• Kilham, Hopkins & Greeley, Architects, have opened new offices at 126 Newbury St., Boston, Mass.

• The LeBrun Traveling Scholarship for 1933 was awarded to Walter T. Stopa of Chicago. The subject of the competition, for which 122 drawings were submitted, was a Recreation Center for a Small Community. The chairman of the Scholarship Committee was Chester A. Aldrich of New York. The winner was nominated by John Holabird of Chicago.

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• Mills College at Oakland, California, announces that Alexander Archipenko will be a guest instructor during the college's summer session of art, from June 19, to July 29, 1933. Mr. Archipenko, known as a versatile modernist, is the founder and director of L'Ecole D'Art in New York. His courses at Mills College will include painting, life drawing and sculpture.

• To Louis Ayers of York & Sawyer, architects, went the 1933 medal given annually by the New York Chap- of the A. I. A. for distinguished work in architectural design. Citation for outstanding service to the architectural profession was given to Julian C. Levy, of Taylor & Levy, architects, for his work in behalf of unemployed draftsmen and architects.

• The firm of Rogers and Haneman, architects, formerly located at 110 East 42nd Street, New York, has been discontinued. William J. Rogers will remain at the same address, and John Theodore Haneman will remove to 144 East 30th Street, New York.

• Sugarman & Berger, architects, announce the removal of their office from 345 Madison Avenue, New York, to 17 East 49th Street, New York.

• Three California architects were recently appointed for the architectural design of the San Francisco-Oakland Bridge, which, when completed, will be the longest in the world. They are Arthur Brown, Jr., Timothy Pflueger and John J. Donovan. Mr. Pflueger is junior member of the firm of Miller & Pflueger. John J. Donovan is president of the Northern California Chapter of the A.I.A. and is well known as an architect of schools and large public buildings.

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